



PHD

**Water, Place and Learning: A Case Study from the Occupied Palestinian Territories**

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# Water, Place and Learning: A Case Study from the Occupied Palestinian Territories

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A thesis submitted for the degree of  
Doctor of Philosophy

Anna Sowter

Department of Education

April 2016

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## **Abstract**

This research explores the role of co-learning in addressing water issues, being both context sensitive and responsive to the needs, lived experiences and symbolic representations of people at the local level in the case of the West Bank. Water is essential to the wellbeing of all societies, not only due to the necessity of water for life, but because it connects us to stories about place, beliefs and norms, identity and others, through the meanings that it invariably comes to embody. This research critically examines the significance for learning of freshwater: as a physical necessity; as a metaphor; and, as a source of meaning in the context of community-based water interventions. The dominance of particular narratives around water in the Occupied Palestinian Territories are discussed, as these have resulted in the acceptance of specific understandings about the problems and solutions to the water shortages that are experienced across the West Bank in differentiated ways. The effects of these narratives on water intervention processes and outcomes are observed, being most adverse in relation to local ownership, agency and identity as well as sustainability. A meaning-based framework is proposed based on an understanding of sense of place and a socio-political perspective of water shortages, as a way to reconnect the discourse with Palestinians' own accounts of water and place, and to provide opportunities to explore NGO engagement with divergent knowledges, perspectives, and priorities during interventions. It is argued that water interventions can be understood as a social learning process, which NGOs may be ideally situated to mediate. A model of learning and sustainable development is revisited and revised in order to consider the relationship between participation, agency and sustainability in relation to community-based water interventions.

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## **Glossary of Terms, Acronyms and Abbreviations**

Aquifer:	An underground layer of water-bearing permeable rock (Amnesty International , 2009: 8). The ground-water contained in an aquifer can emerge at the surface through natural springs or it can be extracted by pumping. The type of rock, its porosity and permeability will determine the method of extraction.
Capabilities:	What a person values being and doing. The concept is derived from the idea of development proposed by Amartya Sen, as the widening of human capabilities or freedoms.
Capacity:	In relation to capabilities, it is the ability to pursue alternative valued choices or options and encompasses knowledge and skills.
Emic:	An emic account is associated with a pragmatic, subjective stance that starts with the accounts of the research participants' experience, their perspective and the context.
Etic:	An etic account is associated with a normative, objective stance and draws on existing theories and conceptual frameworks as a starting point for knowing.
EWASH:	The Emergency, Water, Sanitation and Hygiene group. The group was established in 2002 to coordinate work in the water, sanitation and hygiene sector in the West Bank and Gaza.
FAO:	Food and Agriculture Organization
FC:	Faecal Coliform
Governorate:	An administrative division of the Palestinian Territories under the jurisdiction of the Palestinian Authority.
Grey water:	Domestic wastewater, e.g. from bathing, that does not contain faecal contamination.
MEnA:	Ministry of Environmental Affairs for the Palestinian Territories
NGO:	A non-governmental organisation
OPT:	Since 1967, the West Bank, Gaza and East Jerusalem have been collectively known as the Occupied Palestinian Territories.
PLO:	Palestinian Liberation Organisation

PWA:	Palestinian Water Authority
STEPS Centre:	'Social, Technological and Environmental Pathways to Sustainability' Research Centre at the University of Sussex
TC:	Total Coliform
UNCTAD:	United Nations Conference on Trade and Development
UNICEF:	United Nations Children's Emergency Fund
UNOCHA:	United Nations Office for the Coordination of Humanitarian Affairs
UNRWA:	The United Nations Relief and Works Agency for Palestine Refugees in the Near East
WASH:	Water, Sanitation and Hygiene
Wastewater:	Commonly defined according to the source of effluent, whether it is domestic, industrial, commercial or agricultural. Wastewater contains a number of pollutants and contaminants which can cause health and environmental problems.
Water Scarcity:	Conventional approaches often define water scarcity according to the difference between water availability, (physical availability of rainwater, ground and surface water in the hydrological cycle) and the demand for water (e.g. based on basic needs estimates). Definitions of social water scarcity recognise that scarcity is experienced by certain groups when they do not have access to water in sufficient quantity and quality, due to inequalities that result from structural and institutional issues. These are referred to as entitlement failures (see Mehta, 2014)
WeD Group:	Wellbeing in Developing Countries Research Group, The University of Bath
WHO:	World Health Organisation
WWDR:	United Nations World Water Development Report

## **Chapter 1: Introduction to, and Overview of the Research**

This research examines the relationship between learning, water and sense of place with a specific focus on the Occupied Palestinian Territories. It arose from an interest in how learning as a central process in NGO-led community-based water interventions can enable local people to share and analyse their experiences and understandings of their lives. The research examines the idea of learning by all stakeholders so as to engage with multiple understandings of water shortages and solutions. It is often the process of defining the problem and the underlying assumptions that acts to simplify the complexity of water issues and diversity at national and local levels. Rather a learning process can serve to reduce the gap between policy and practice, and local people's lives.

This research examines dominant water narratives in a context where there is considerable power embedded within certain discourses about water. These powerful narratives shape understandings of the causes of water shortages and options for water intervention practice and policy. They also define what knowledge informs such processes and the stakeholders that are involved in decision-making. Both local and international NGOs were interviewed in the context of water interventions in the Occupied Palestinian Territories (OPT), to understand the assumptions and values that are translated into practice. NGO policy papers and programme reports are also reviewed. At the local level, understandings of water issues are examined using a meaning-based framework that is informed by sense of place theory. It is presented in this research with theoretical interest but also for practical insights in relation to learning. Local accounts were recorded from two case study communities in the West Bank as well as observations of local water technologies and intervention processes. These local narratives are strongly rooted in place and a history of times of conflict that hold meaning for the people that they belong to. Due to power asymmetries between different stakeholders, these accounts assist in highlighting the need to acknowledge a greater diversity of the knowledge and the need for water interventions to be more inclusive and connective and deliberative.

### **1.1 Introduction to the research narrative**

This research examines a range of related and interconnected issues linking learning, water and sense of place. These issues are touched on by a wide range of literature and practices. The linkages are explored through a literature review, that develops a meaning-based framework that is both theory and data-led. The research fieldwork seeks to deepen the understanding of meaning-making in relation to water through the specific cases of two communities in the West Bank and a case study NGO. This research examines the role that a learning-based approach could fulfil in this context,

which supports meaning-making processes. It draws on some of the key ideas in the social learning literature that suggest the need for donors and NGOs to become more aware of alternative knowledge, values and perspectives, and to learn from these.

In addition to developing the conceptual linkages between water and place, the meaning-based framework also guided the research design. Local accounts were privileged by employing a combination of open questions and questions that were shaped by ideas from the literature about the relationship between place, water and learning. At all times, every attempt was made to ensure that the interview questions were relevant to local people's interests and experiences. Each thematic area of the meaning-based framework was analysed so that broader inferences could be made, but the themes are embedded in the narratives of local people as a way of reconstructing their accounts from the data. The meaning-based framework was used to explore how local people describe their experiences of water shortages and how they understand water in relation to different dimensions of their lives. Meaning-making in relation to water and place is understood as a response to ongoing and dynamic interactions with the environment and others.

Local understandings and meanings are subsequently examined in relation to dominant models of water interventions that donors prescribe for the Occupied Palestinian Territories (OPT). The research describes some of the water narratives that underlie these interventions. These include water shortages as a result of poor water management, water shortages as a humanitarian crisis and human rights-based accounts. These narratives are prevalent in water discourse at different institutional levels. The consequences of the discourse of an enduring humanitarian crisis, which is dominant at the global level, are discussed in relation to local people's everyday lives. Water narratives are also examined in regard to donor and NGO responses to water shortages and the implications for the development of alternative solutions at the local level.

With a basis in the literature, it is assumed in this research that prescriptive models of water interventions constrain opportunities for learning by all stakeholders and as a result limit local participation and local ownership. The literature further suggests that this situation has a number of implications for the sustainability of water provision and use. Therefore, this research examines the role of learning as a means of supporting local agency and sustainability. Some of the key ideas from the educational literature are examined, including the deliberative process of exchanging different knowledge, perspectives and multiple understandings of the problem(s) and solution(s) (also referred to as problem-definitions), in addition to supporting agency and capacity building. Subsequently, revisions to an influential model of social learning and sustainable development are proposed. This revised model is offered as an heuristic to explore the interrelationships between all these factors in the context of NGO practice.

This research draws a number of conclusions relating to water, place and learning as well as sustainability, which emerged from the fieldwork as a key issue. The implications for NGO-led community-based water interventions are elaborated in relation to facilitating processes that support local meaning in the context of water shortages and change amid ongoing conflict.

## **1.2 Positioning the research: water, place and learning**

### **1.2.1 Water**

Water now has a significant role within international development and conservation, for example in relation to poverty alleviation, health, food security and ecosystem services. However, much of intervention practice and policy is still failing to address water issues in ways that meet the needs of marginalised people and lead to sustainable and equitable water provision (Mehta and Movik, 2014; WaterAid and Tearfund, 2012). Although the Millennium Development Goal for access to drinking water was achieved, 768 million people globally still rely on unsafe sources of drinking water (HLPE, 2015). Climate change is also reported to be contributing to the uncertainty around the availability of water in many regions across the globe (HLPE, 2015). Despite growing inequalities in access to and use of water (particularly in relation to urban and rural areas and gender), water, sanitation and hygiene are often under prioritised and underfunded (WaterAid and Tearfund, 2012).

It is within this wider context that the research focuses on the water crisis in the OPT. This research describes how without water security, marginalised communities from the West Bank are unable to live their lives in ways that are meaningful to them and that enable them to flourish. Water is an absolute necessity for life, for food security and health; but it also connects people to their living history, to their beliefs and to others. Donors in this region have become major stakeholders in water and sanitation and have been shaping policy and sector financing. Some Israeli and Palestinian NGOs are attempting to engage both governments, donors, and the international community in actions that support equity and sustainability in water services and provision.

In response to some of the equity and sustainability issues in the OPT, this research develops insights from the work of Mehta (1997; 2005) and Mehta *et al.*, (2007) who support approaches that broaden the knowledge that informs water services, to include the knowledge and perspectives of marginalised people. They argue that analysis and actions in water interventions are guided by how water issues are understood and represented. Therefore, problem-definitions around water shortages and the underlying assumptions and interests of different stakeholders, are significant and need to be understood by all those who are involved in water interventions. This



is deemed to be important in the region as some such problem-definitions have become subsumed into certain water narratives and act to support the status quo of emergency water aid. By reducing both the diversity of understandings and complexity, such framings have consequences for society and nature.

### **1.22 Place**

This research also draws insight from the theory of sense of place and the wide range of literature that explores the value of the concept in relation to conservation and development. In this literature there is a growing recognition of the significance of place in relation to people's whole way of life and the complexity of the material, relational and symbolic. Place or place-based meanings are argued to have a role in the process of constructing identities, and to borrow a phrase from Sen (1999), in shaping valued beings and doings in specific contexts. By centring around sense of place as a concept, this literature elucidates that much can be learned about the local context and more specifically about natural resource management and conflict. Consequently conflict is as much about contested meanings as it is about access to natural resources themselves (e.g. Jacobs and Buijs, 2011; Cheng *et al.*, 2003).

Sense of place theory offers a meaning-based framework that construes 'being in a place' as being fundamentally a matter of relations, including the complex connections that people have with their environment and the continuous transformation of meaning.

### **1.23 Learning**

Local people are recognised within this research as having valuable knowledge and skills specific to the context of the OPT. This research is interested in the capacity and agency that people need in the context of water shortages, with the uncertainties and change that is shaping and giving meaning to their lives. This echoes Amartya Sen's idea of human development as the widening of human capabilities or 'freedoms' (referring to the expansion of a person or group's ability to pursue and achieve valuable 'beings' and 'doings') (Sen, 1999).

Learning is given a central role in the social learning literature as a way of enhancing intervention strategies and processes for sustainable water provision and use (e.g. Lotz-Sisitka, 2012). The social learning process engages donors, NGOs and other stakeholders in a consideration of multiple understandings and a diversity of knowledge, power relations, and sustainability. This research considers approaches that seek to enable greater inclusion and connectivity in water interventions and advocate greater attention to local understandings, local experiences and local

priorities – acknowledging that these are embedded within a certain socio-political and environmental context.

### **1.24 Water and place**

Sense of place theory is reviewed within this research in relation to a wide range of literature for the purpose of exploring the different dimensions of place and water and the interconnections between these.

This research draws on an understanding that meanings matter in relation to water provision and use. As an important part of people's environments, water is understood in the literature to embody ideas, values and meanings, relating to specific social, cultural, political and environmental processes. Expressed in Greider and Garkovich's (1994:1) notion that 'every river is more than one river', is a view for which people are argued to respond in different ways to the meanings they create and in doing so, transform their environment and themselves. In this way, meanings and symbolic representations of these, can be understood to be part of the cultural repertoire that groups can draw upon, to negotiate their place in the world. The work of Keith Basso (1996) and his ethnography of a Western Apache village is instructive here, as it broadens an awareness of the significance of place as a metaphor that is understood and experienced in a multitude of ways.

Sense of place is at the heart of the meaning-based framework developed in this research. Its purpose is to privilege local accounts of water shortages and to better understand the meaning that they make of their lived experiences in relation to water. It is an interpretative appraisal that follows examples of person-centred research. Person-centred models address humanitarian and development interventions in a more comprehensive and holistic way, such as those developed by the Wellbeing in Developing Countries Research Group (WeD) to assess wellbeing (Gough and McGregor, 2007), and the Social, Technological, Environmental Pathways to Sustainability (STEPS) Centre's 'pathways approach' that emerged from systems thinking at the University of Sussex.

### **1.25 Water, place and learning**

The literature suggests that sense of place is a central concept in understanding how learning can be mediated in community-based water interventions. Sense of place has been examined in the context of environmental education as a way of contextualising learning and strengthening relationships with place (e.g. Mueller-Worster and Abrams, 2005). This is often with the purpose of enhancing environmental stewardship or participatory and sustainable natural resource management (e.g. Kudryavtsev *et al.*, 2012; Cheng and Mattor, 2010). More recently, sense of place has been incorporated

into resilience theory. Here, it is described as a process of recreating shared meanings that support the re-building of place attachment in post-conflict or disaster contexts (e.g. Stedman and Ingalls, 2014: 137).

It is these situated understandings and meanings that can inform water interventions through social learning. Social learning is understood as a process that occurs within the social context of water interventions; but it can occur through an organised learning strategy (Wals and van der Leij, 2007: 18). The educational literature describes social learning as a vehicle for engagement with all stakeholders in a process that enhances local ownership of change and builds capacity. Both strengthened ownership and capacity are argued to be essential for sustainability (e.g. Sterling, 2014). In the context of NGO-led community-based water interventions sustainability is understood in relation to water provision and use and includes the ability of people to respond to and manage uncertainty and change.

In the context of NGO-led community-based water interventions in the West Bank, learning takes place in a milieu of power asymmetries, multiple interests and perspectives. Here, the stakeholders include bilateral and multilateral donors, national and local government, international and local NGOs, public and private actors and local community institutions. The ability of these different stakeholders to make decisions and to act varies considerably at all stages of water interventions. Thus the research emphasises an idea of learning as one that involves all stakeholders in an iterative process of deliberation, negotiation and integration.

## **1.26 Summary**

The OPT illustrates many of the above issues in a very striking way, where acute water shortages have resulted from power asymmetries between Israel and Palestine and from the transfer of control over water and access to Israel, alongside the transfer of territorial control (Selby, 2013; Cahill-Ripley, 2011; Shiva, 2002). My personal experience in the West Bank, prior to this research, provoked an interest in the interconnections between water, place and learning. Here, the conflict has resulted in ongoing symbolic transformations of the land and water and the dependency of many communities on vital humanitarian assistance. This research considers the role of learning and the integration of communities into knowledge flows in a challenging context where questions around local ownership, agency and sustainability are frequently suspended in water interventions. The role of learning is discussed as a way of building local capacity and strengthening agency to bring about greater participation and local ownership of representations of the problem-definition(s) and change.

### **1.3 Research question**

The research question is as follows:

*How can learning that results from NGO-led community-based water interventions be mediated by local level understandings, particularly those that relate to sense of place?*

Here learning is interpreted in terms of a social learning perspective, as the context of NGO-led community-based water interventions involves learning at a number of levels and by diverse stakeholders. Learning takes place through social interactions and engagement with the environment as well as being initiated by societal and / or environmental change.

This research contributes to understandings of water shortages and local realities, the need for which is suggested by existing research that revisits the critique of global water narratives that privilege accounts that claim universal knowledge (e.g. Mehta and Movik, 2014; Van Koppen *et al.*, 2006; Gleick, 2003). Therefore, this research addresses the importance of local knowledge, perspectives and meanings for water provision for more marginalised communities, with the development of a meaning-based framework that is empirically tested in the West Bank. Through a review of the social learning literature and research findings, I examine the role of co-learning in supporting local communities in their engagement with other stakeholders and their participation in decision-making and change. Water is essential for life but it is also necessary for achieving a valued way of life. It is suggested that this truth needs to be recognised by donors in the context of the OPT, in order for water interventions to bring about sustained improvements to the lives of the most marginalised people.

In summary, the aims and objectives of the thesis are as follows:

#### **1.3.1 Research aims**

- 1) to develop a meaning-based framework in relation to water that is based on both sense of place theory and research undertaken in the OPT;
- 2) to compare local experiences and understandings of water issues in the OPT with dominant models that are applied by international donors and global perspectives of water shortages;
- 3) to enrich theory of the interrelationships between the diverse dimensions of place and water in order to bring attention to the factors that can affect people's experience of water shortages and community-based intervention outcomes; and
- 4) to develop a model linking social learning and sustainability that can be used heuristically by practitioners to explore how learning can contribute to local meaning-making in the context of developing sustainable community-based water services.

### **I.32 Research objectives**

- a) to link the concept of sense of place and water through a wide-ranging, interdisciplinary literature review;
- b) to develop a flexible research design capable of responding to the challenging fieldwork context;
- c) Through a series of case studies, to empirically test the meaning-based framework in a way that enabled local perspectives and knowledge to emerge. Data was collected using in-depth interviews with individuals from these communities, a focus group session with a women's committee and participant observation;
- d) To revise the meaning-based framework in response to the data;
- e) To examine the specific implications of the data and analysis through further case studies of international and local NGO water, sanitation and hygiene (WASH) programmes; and,
- f) to refine an established model of learning and sustainable development in light of the foregoing.

### **I.4 Research setting**

Water shortages are now acutely experienced throughout the OPT. Geopolitical, economic, social and ecological changes have ensued from an intractable conflict and Israeli occupation since 1967, and underlie this instability and uncertainty. The devastating conflict that persists in the region today has a long and violent history, which for many Israelis and Palestinians dominates their memories of place (e.g. Shavit, 2013). The dynamics of this conflict have been driven by a number of factors and do not only exist between Israel and Palestine but are demonstrated between different political factions within Palestine and tensions between traditional local institutions and the Palestinian Authority (Trottier, 1999).

I recognise that there is no one history of the region nor of the conflict, as history involves a struggle over meaning (Said, 1978). Instead, multiple and contested historical narratives exist that are often expressed in polemical terms. It is not the purpose of this research to review the political history or the history of conflict in the region. Rather, a selected historical overview of the conflict is provided in Table I.0 for the purpose of framing insights into the Palestinian narratives that are described in this research. The accounts of local people in the West Bank centre around memories of some of these events and are significant to their lives. This overview is therefore not intended to be a comprehensive history such as that offered by Berry and Philo (2006), but helps to situate the lived accounts of the residents of remote rural areas in the West Bank and their perspectives on the role of certain events in creating the ongoing water shortages. The affects of the 1967 military occupation of the Palestinian

Territories, with the imposition of Israeli Military Orders that displace existing laws regarding water and, latterly, the Oslo Accords, are discussed in Chapters 4 and 5.

It is estimated that less than 40 per cent of the Palestinian population lives within the West Bank and Gaza (PCBS, 2010; RAND Palestinian State Study Team, 2007). The West Bank has an estimated population of 2.4 million, while 1.76 million people live in the Gaza strip, which includes 1.26 million Palestinian refugees (figures for 2014 from the UNRWA). The Palestinian Diaspora is vast, with an estimated one-third of the Palestinian refugees who are registered with the UNRWA, living in camps in Jordan, Lebanon and the Syria in addition to those in refugee camps in the Gaza strip and the West Bank.

Rubenberg (2003) discusses the deep religious ties that both Christian and Muslim Palestinians have to Palestine, who share the common language of Arabic as well as a sense of Arab and Palestinian identities. Estimates from 2015 suggest that 80-85 per cent of Palestinians in the West Bank are Muslim, 12-14 per cent are Jewish and 1-2.5 per cent are Christian (CIA-The World FactBook: West Bank). Rubenberg (2003: 2) argues that the connection of the Palestinian people to the land remains pivotal to their national identity:

'The basis of Palestinian social life was and continues to be the *hamayel* (patrilineal clan or lineage). The centrality of the land and village is the crux of their social organization, their discourse of honor, and their national narrative'.

Table 1.0 Timeline of events in relation to the conflict and political history of the region

<b>1947</b>	<p>End of the British Mandate that saw the annexation and division of Palestine into Transjordan and the Palestinian mandate.</p> <p>UN partition recommends the creation of two independent states: a Palestinian Arab state and a Jewish state, which would be 57 per cent of mandatory Palestine.</p>
<b>1948 - 1949</b>	<p>Israel's Declaration of Independence on 14 May. Israel expands its borders by force to encompass 77 per cent of mandatory Palestine.</p> <p>Palestinians know this as the 'Nakba' (meaning catastrophe), when 800,000 Palestinians fled or were expelled from their homes.</p>
<b>1967</b>	<p>The Six-Day War between Israel, Syria, Egypt, and Jordan (part of the Arab-Israeli conflict). Israel occupies the Golan Heights, Sinai peninsula, West Bank, Gaza Strip and Arab East Jerusalem.</p>
<b>1967-1970</b>	<p>The War of Attrition between Israel, Egypt, Jordan, the Palestinian Liberation Organisation (PLO) and their allies.</p> <p>The PLO are forced out of Jordan.</p>
<b>1973</b>	<p>The October War - Egyptian and Syrian forces attack Israeli troops in the Occupied Sinai peninsula and Golan Heights.</p> <p>The PLO relocates to Lebanon from where it fights a guerrilla war against the Israeli state.</p>
<b>1982</b>	<p>Israel invades Lebanon and attacks PLO forces</p>
<b>1987 - 1993</b>	<p>The First Palestinian Intifada</p>
<b>1993-1995</b>	<p>The Oslo Accords - Oslo I (1993) and Oslo II (1995) result from the Madrid Peace conference of 1991.</p>
<b>2000 - 2003</b>	<p>The second Palestinian Intifada or Al Aqsa intifada</p>
<b>2002</b>	<p>Construction of the separation wall / security fence begins</p>
<b>2005</b>	<p>Fatah's Mahmoud Abbas elected as leader of the Palestinian National Authority and President of the State of Palestine.</p>
<b>2006</b>	<p>Hamas elected as the governing authority in the Gaza Strip. Israel imposes a blockade of Gaza.</p>
<b>2008-2009</b>	<p>Conflict in Gaza and Southern Israel</p>
<b>2012</b>	<p>UN General Assembly votes to grant Palestine observer State status</p>

### **1.41 An overview of water in Israel and Palestine**

Many of the events detailed in the timeline have implications for water issues in the OPT; from the argued legitimisation of Israeli access to the water resources in the West Bank in the Oslo II Accords (Selby, 2003); to the construction of the wall and the annexation of land and hence water sources in the West Bank (Trottier, 2007); to the international community's response to the election of Hamas in 2006 with a period of withdrawal of aid and longer term economic sanctions (Cahill-Ripley, 2011).

There are a number of groundwater aquifers in this semi-arid region that have historically supplied water where it emerges at the surface as springs. However, the accessibility of groundwater from aquifers varies considerably, depending on the size, depth, porosity and permeability of the rock (Allan, 2001). Groundwater is recharged from the infiltration of precipitation but there are both regional and seasonal variations in rainfall which affects this recharge. Groundwater recharge is also affected by abstraction rates, which can cause a lowering of water levels if long-term over-abstraction occurs.

Groundwater is an essential source of water for both Israel and Palestine as well as other neighbouring countries in the Middle East. The shared Mountain aquifer which is the major source of groundwater for Israel and Palestine, is composed of three basins; known as the North Eastern, Eastern and Western aquifers, shown in Map 1.0. The groundwater from the Eastern aquifer is, however, highly saline. Allocation of water to Palestine was determined under the Oslo Accords, which established the foundation for, access to, and the management of shared water resources that continues today. The Agreement stipulated allocations based on 'prior use' and estimated annual yields of 363 MCM/Y for the Western aquifer, 145 MCM/Y for the North Eastern aquifer and 172 MCM/Y for the Eastern aquifer (from Schedule 10 for Article 40 in the Oslo Accords, 1995). However, the final status negotiations did not occur and Israel has not released the agreed quotas to the Occupied Territories (RAND, 2007). While the Palestinians in Gaza are solely reliant on the shared coastal aquifer for drinking water, the groundwater levels here have severely declined and the infiltration of seawater and wastewater have made it essentially unsafe to drink:

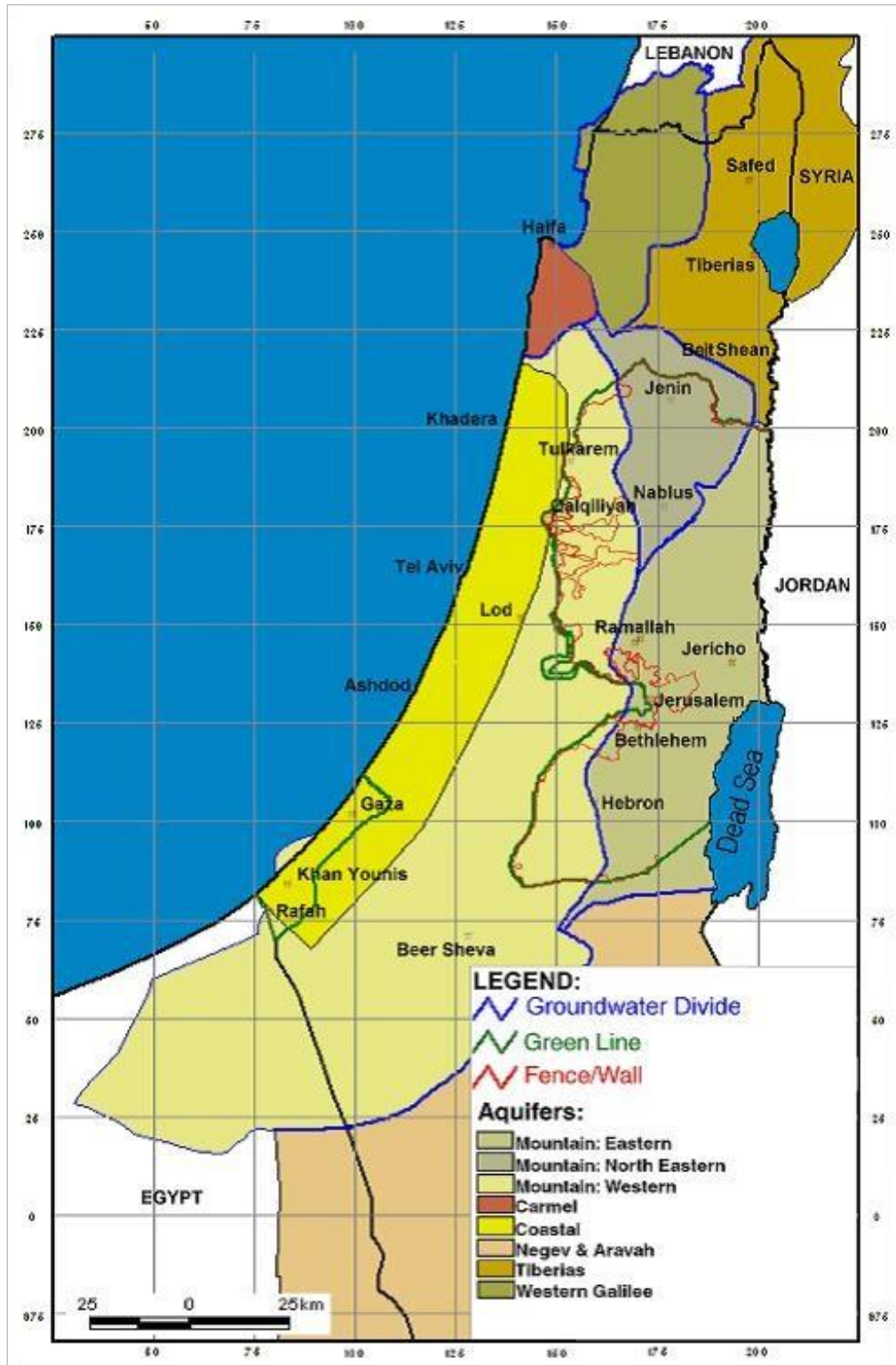
'The damage of contamination and over-abstraction is such that the aquifer may be unusable by 2016 and, if unaddressed, the damage may be irreversible by 2020'. (UNCTAD, 2015: 12)

In addition to groundwater, the Jordan River is the most important shared transboundary surface water for the region, flowing through Lebanon, Syria, Jordan, Israel and the West Bank. While Israel and Jordan have diverted the upstream river flow (e.g. the Israeli National Water Carrier), Palestinians have been denied access to the Jordan River since the 1967 military occupation (UNOCHA, 2012). Furthermore, the Oslo II Agreement did not include Israeli-Palestinian policy coordination over the Jordan River (Selby, 2013). As Israel is the upstream riparian, the diversions in the



upper tributaries have severely reduced the flow of surface water to the West Bank and have been linked to the receding water levels in the Dead Sea.

Map 1.0 Transboundary Aquifers in Israel and Palestine



(Source: Amnesty International Publications, 2009)

The transboundary nature of these water resources and wastewater management requires integrated water management and cooperation. Despite the establishment of a Joint Water Committee through the Oslo II Agreement, for the coordinated management of the West Bank and shared water resources, Israel's territorial control and the exclusion of policy coordination for the coastal aquifer and Jordan River, is argued to have determined Israel's current sovereignty over water resources in the region (UNOCHA, 2012; Selby, 2003). As a result, Selby (2013: 5) argues that the 'utilisation of all three resources is highly asymmetrical, in Israel's favour'.

The scarcity of water in the region has arguably supported water narratives that purport the need to control water resources. Consequently, water security has been central to nation-building in both Israel and Palestine (Zeitoun, 2008). However, Zeitoun (2008) argues that the occupation of the Palestinian Territories gave Israel a hegemonic position, which saw the expansion of agriculture and increase in water consumption in Israel. Allan (2001) relates this in part to the political and economic strength of the Israeli State that enabled it to pursue water management options that were not available to the Palestinian Authority (e.g. water pricing, the creation of new water supplies with desalinisation and the reallocation of water for economic diversification). Observers state that the occupation has further exacerbated the political and economic instability of the West Bank, meaning that the development of new water supplies is dependent on donors:

'The Palestinian economy is the economy of an occupied territory, and therefore – contrary to the claims of some observers – the efficacy of donor support has been undermined by occupation, not by the inadequacy of Palestinian National Authority policies or poor donor coordination. The fiscal burden of the humanitarian crises and the occupation-related fiscal losses have diverted donor aid from development to humanitarian interventions and budget support. No amount of aid would have been sufficient to put any economy on a path of sustainable development under conditions of frequent military strikes and destruction of infrastructure, isolation from global markets, fragmentation of domestic markets and confiscation and denial of access to national natural resources'. (UNCTAD, 2015: 2-3)

Again, there are multiple narratives of water scarcity and policy options in the wider context of the Middle East. Allan (2001: 33) argues that many countries in the Middle East continue to pursue supply-orientated strategies based on past estimates of water availability and consequently rely on 'importing virtual water' rather than adopting politically unattractive water demand management approaches and water reform. Zeitoun (2008) further supports the view that there is a physical scarcity of water in the region and unsustainable water consumption in the agricultural sector:

'The common notion of the land of Palestine and Israel as dry and desertic is worth reconsidering. While the Sinai desert creeps northward from Africa into

Gaza and the Negev, the cities of Tel Aviv, Jerusalem and Ramallah, which lie slightly to the north, receive about 600mm of rain annually. This is more than, say, Paris. Nevertheless, there is an overall physical scarcity of water, and the growing population ... only exacerbates the stress on natural resources. In any case, agricultural consumption far surpasses that of any other sector, such that neither state has had the ability to be self-sufficient in the food sector since the 1970s'. (Zeitoun, 2008: 45)

The State of Israel attributes an ongoing water crisis in the region to a decline in freshwater sources, climate change and the rising demand for water as a result of population growth (The State of Israel Water Authority, 2009: 1). As mentioned above, Israel has diversified its water supply, with investment in large-scale desalinisation and the established reuse of treated wastewater for irrigation. It obtains freshwater from several other aquifers (the Negev and Galilee), in addition to the Mountain and Coastal aquifers and the Jordan River (RAND, 2007).

The State of Israel Water Authority acknowledges the Interim Oslo Agreement and the responsibility of the Joint Water Committee for the implementation of the water regime that it defines (The State of Israel Water Authority, 2009). They maintain that the Palestinian Authority is violating this Agreement and contributing to water shortages as the result of the illegal drilling of wells in the Mountain Aquifer and illegal connections to Mekorot's water supply pipes (the Israeli water company). Furthermore, the Israeli Water Authority highlights the absence of wastewater treatment in the West Bank that they state is contaminating both surface water and groundwater sources, and should instead be treated for agricultural use so that freshwater can be reallocated for domestic purposes. They argue for the need for cooperation for the optimal utilisation of all water sources with the adoption of new technologies and demand management techniques (The State of Israel Water Authority, 2009: 29).

However, Cahill-Ripley (2011: 81) argues that 'although Israel cooperates in certain water-related matters, Israeli policies ensure that Israeli settlers and Israel proper have priority in water use and allocation'. Despite the establishment of the Palestinian Water Authority (PWA), recognised under the Oslo Interim Agreements as being responsible for the development and management of the Palestinian water sector, it is argued by the World Bank and others (e.g. EWASH, 2012; Bashir and Talhamy, 2006), that it has been unable to fulfil this duty due to the control that Israel maintains over water resources (World Bank, 2009). This is also related to the fragmentation of the Palestinian Authority's control due to the division of the West Bank under the Oslo II Agreement into 3 zones; Area A, Area B and Area C (see Map 1.1). The Palestinian Authority has full control in Area A only, which constitutes 18 per cent of the West Bank, with civic responsibilities in Area B. However, Israel has full civil and security control in Area C, which is 60 per cent of the West Bank.

Map I.I Map showing the division of the West Bank into Area A, Area B and Area C



(Source: UNOCHA, 2011)

In the absence of the qualification of Palestinian water rights in Oslo II and the under-developed water sector that the Palestinian Water Authority inherited, local people receive inadequate water supply and poor water quality that has serious health implications (PWA, 2013). Many Palestinians in the West Bank rely on private water tankers and NGOs for drinking water supplies due to poor water infrastructure and the high costs of obtaining water from the Israeli national water company Mekorot, which supplies Palestinian water utilities under the direction of the Israeli authorities. Furthermore, under Israeli Military Law, it is illegal for Palestinians to drill new wells or to rehabilitate existing ones. Permits must be obtained for any water-related project from the Joint Water Committee that has the overall authority on the development of new supplies (Amnesty International, 2009). According to recent estimates from the UNOCHA (2014), 312,000 people still have limited access to water and sanitation in the West Bank.

### **1.5 An overview of the thesis**

Chapter 2 focuses on a review of the literature that addresses issues linking learning, water and sense of place. These issues include the dominance of generalised global water narratives and issues of social equity and sustainability in water access that are often obscured at both national and local levels. Learning in the context of NGO-led community-based water interventions can be narrowly interpreted in terms of information provision and awareness campaigns for local people. The chapter introduces the argument that while these programmes are important, an understanding of learning as being integral to water intervention processes and involving all stakeholders, is necessary for informed engagement, local ownership, and agency. The discussion of sense of place suggests that understandings of water can be broadened beyond the material to include symbolic and relational dimensions that need to include socially-situated, practical ways of knowing. It concludes that learning in relation to these understandings is essential to address the disconnect between water intervention practice and local realities and to support people in the process of meaning-making in response to water shortages and wider change.

Chapter 3 addresses the methodological issues with a discussion of the significance of understanding ontology, epistemology and methodology for this research. It reviews the implications of social theory for the research process, including the research question, the research methods, the data collection and the relationships between the researcher and others that are involved in the research process. The methodology is subsequently revisited after the data collection with a reflective account of my experiences in the West Bank, working with residents from the case study communities and the NGO as well as other people that I encountered along the way.

The importance of local realities is discussed through the accounts of water shortages given by residents of the case study communities in Chapter 4. The chapter seeks to



highlight the importance of practical ways of knowing and the interconnections between the dimensions of sense of place in the meaning-based framework. The framework is revised in response to local understandings of water and place and accounts of participation in NGO-led community-based water interventions. Sustainability emerges as a significant concept in both local narratives and NGOs' accounts. A deeper understanding of sense of place is gained from local narratives, which contributes to sense of place theory. This also has implications for assessment as it suggests that the categories should be revised in different contexts in order to reflect local understandings of water, their relationships to place and the issues that are identified by local people themselves.

Chapter 5 continues with an analysis of understandings of water and place in relation to NGO (re)presentations of water issues in the West Bank. Some distinctions are made between the dominant water narratives in the region. These are then discussed in terms of how water shortages are framed by stakeholders and how they shape intervention practice and policy. The implications of these water narratives for the lives of the communities that interventions affect is discussed in relation to significant dimensions of the meaning-based framework.

In light of the key emergent theme of sustainability from the fieldwork, Chapter 6 explores the linkages between learning, water and sustainability. Additional case studies illustrate the praxis of social learning and a model of social learning is revised from this and social learning theory. The chapter explores the links between social learning and the sustainability of water provision that relates to locally valued ways of doing and being. It attempts to distinguish between different social learning perspectives and their principles, and the implications of these for learning approaches and outcomes. Based on the ideas of multiple-loop learning, situated learning and communities of practice, the chapter discusses how mediation as a learning strategy can integrate diversity and help to address power dynamics and tensions that arise in practice.

Chapter 7 provides a synthesis of this research and the linkages between learning, water, place and sustainability. Through a number of principles that are proposed to connect water, place-based understandings, learning and sustainability, I suggest that an inclusive, reflexive and networked form of social learning, can support local meaning-making and negotiation, strengthen agency, and build capacity. Consequently, I conclude, it is important to connect these linkages for local ownership of change, and for sustainable water provision and use, in the context of NGO-led community-based water interventions in the West Bank.

## **Chapter 2: Literature Review**

### **2.0 Introduction**

Water has become significant in international development narratives, related in part, to the targets that were established and achieved in the form of the Millennium Development Goals (UN, 2003), to halve the proportion of the population without sustainable access to safe drinking water and basic sanitation (WHO, 2012). What ensued was a focus on the technical issue of water distribution and the large-scale infrastructure that this demanded (Movik and Mehta, 2009). A renewed interest in the construction of dams and reports that private investment in the water sector is being insufficiently regulated (HLPE, 2015), highlight how global water discourse remains largely focused on market solutions and technical supply solutions in response to current water issues. This restricted view of water and water services, neglects other understandings of water provision and use, including the importance of other factors that are in play, including social differences, political processes and environmental change. Despite the achievement of the Millennium Development Goal in relation to access to water, 768 million people globally are reported to continue to rely on unsafe sources of drinking water (HLPE, 2015). It seems unlikely that this will improve if water issues are not addressed in ways that are equitable and sustainable in the face of increasing uncertainty and change (Mehta and Movik, 2014).

This research explores an important part of this agenda - the role of learning in water provision in the context of NGO-led community-based water interventions. The learning that occurs through community-based water interventions may be either by the recipients of such interventions or by staff of the NGO(s) and other organisations involved in its coordination. This research explores the role of learning in NGO policy and programming activities, in relation to how water interventions might better bring meaningful and sustained improvements to the lives of marginalised groups.

The literature review discusses how water invariably embodies meanings associated with place, and suggests that sense of place is a significant concept in understanding how learning can be mediated in NGO-led community-based water interventions. This argument is a response to a number of issues that emerge from the literature and from practice that relate to, firstly, how water shortages are understood and, secondly, the representation of others, particularly marginalised groups, by external actors. The claims that different stakeholders make over water resources relate to specific understandings of the problem(s) and solution(s) (or the problem-definition). It is these understandings that become as contested as water itself.

This literature review brings together a range of ideas and discussions about water, sense of place and learning, and explores the relationships between them. There are still considerable barriers to the universal provision of water and sanitation in addition to increasing uncertainties about water availability in different regions across the globe

with climate change (e.g. HLPE, 2015; WaterAid and Tearfund, 2012). Some of these wider issues are discussed further in this chapter where they have implications for the local level, and for this research in the OPT.

The lived experiences of local people and their understandings of water can play a limited role in water interventions due to short project cycles and the dominance of the global scientific knowledge of international agencies that informs the problem-definition. This research examines sense of place theory for insights into how water is understood locally, that could lead to greater attention on the diversity of meanings and knowledge in NGO-led community-based water interventions. It is argued that this requires a role for learning as a vehicle for greater equity, agency and local ownership of change. The following discussion focuses on the context of NGO-led community-based water interventions. Although community-based water programmes are often short- to medium-term interventions due to short project funding cycles, they can offer a means towards sustainable water provision and use where they support coordinated actions and collaboration between governments, international agencies and NGOs.

## **2.1 Situating the research**

Since the Millennium Summit, water has been acknowledged globally as being fundamental to sustainable development (e.g. UNWWDR, 2015). However, according to Movik and Mehta (2009), in the reductionist process of framing water as an economic good that has ensued, the water sector is failing to meet the needs of people who are experiencing marginalisation and poverty. This is in part attributed to the assumption that access to water is linked to poverty reduction without examining the other factors that make water an 'enabling resource' (Moriarty *et al.*, 2004; 19). Furthermore, despite examples of the decentralisation of water governance and public-private partnerships for water services, there are often no processes for enabling marginalised groups to access decision-making in water resource management, or explicit directives in relation to the equitable distribution of water resources and sustainability (Tremblay, 2011; Lotz-Sisitka and Burt, 2006; Mehta and Ntshona, 2004). The arguments for market-based approaches and access rights in relation to water, continue to be highly debated and unresolved (e.g. Loftus, 2015; Tremblay, 2011; Bakker, 2007; Filmer-Wilson, 2005). Both market-based approaches and human rights arguments will be discussed further in Chapter 5.

In response to the continued inequality in access to water, Movik and Mehta (2010) argue that the relationship between the ways in which water issues are framed, the type of intervention, and its outcomes, should be explored. They give the example of the dominant narrative of water as a scarce resource and economic good often thought to require demand management and market solutions. The resultant situation is a greater focus on water for productive uses to the neglect of other water uses and



pricing systems that impact on poorer and marginalised people. Movik and Mehta (2010) observe a standardisation of problem-definitions and solutions to water shortages, as well as significant discrepancies between the discourse on water issues and the everyday lived experiences of people at the local level. This has led to calls for greater contextual diversity in water and sanitation policy and practice, to fit both a diversity of understandings, needs and environments and ultimately to widen access and achieve sustainable water provision and use (Mehta and Movik, 2014; Van Koppen *et al.*, 2006; Mehta, 2003). Therefore, water resource management needs to be based on processes in the local and regional context.

However, the dominance of large-scale water interventions and cases of the poor representation of marginalised groups in decentralised approaches to water resource management, suggest that variable progress has been made towards ensuring equitable access to participation and decision-making in water interventions and subsequently in widening access to water (e.g. Lotz-Sisitka and Burt, 2006; Gleick, 2003). The arguments that are made in the interest of equity in relation to access to safe and adequate water, are often rooted in understandings of development that are guided by the capability framework developed by Sen (1993). According to this perspective, access to water ensures the capacity of people to realise different states of being and doings and to live a life that they value. However, such an approach is met with challenges on the ground where development organisations struggle to secure funding for capacity building and other strategies that are committed to the principles of participation, equity and sustainability. These strategies are often under prioritised by donors (Filmer-Wilson, 2005).

## **2.2 Meaning matters**

The agenda to place local understandings of water issues as the central point of departure in water interventions, is not new. Since the case for participatory development was made, for example, in the 'Farmer First Approach' (1989), there have been calls for micro-level solutions (e.g. Movik and Mehta, 2009), the use of appropriate technology (Gleick, 2003), recognition of local knowledge and innovation (Greaves, 2010; Gleitsmann *et al.*, 2007), for learning to be rooted in everyday lived experiences (e.g. Wals and van der Leij, 2007) and the better representation of local aspirations and needs in the water domain.

With the ensuing challenges for water and sanitation, there is current interest in how progress in the water domain is shaped and how decisions are made (termed 'directionality' by Movik and Mehta, 2009: 7). Efforts are being made in research to recognise the multiple and divergent social identities that water users adopt and address distributional issues relating to social difference, while also accommodating the uncertainties related to environmental processes.

One approach to addressing water issues in a way that is both responsive to local needs and context sensitive, has been to connect the discourse around water with the needs of local people and their everyday lives. Research is exploring new ways to share knowledge and innovation through understandings of 'localised visions concerning water and water resource management' (Mehta, 2000: 11). Similar to the 'Farmer First' approach (Chambers, *et al.*, 1989), which sought to understand local knowledge and to incorporate local perspectives into agricultural development, recipients of water interventions can potentially influence the process and its fit with a diversity of needs and the local environment, through a prioritisation of people's perspectives and lived experiences. For example, where access to water is poor, Mehta (2000) argues that NGOs who are active in water interventions can learn from people's coping strategies to enable contextually relevant changes, incorporating how these change over time and how they are enabled or constrained.

In an effort to move beyond the transfer of knowledge and technology in development, Chambers *et al.*, (1989) introduced the idea of 'grounded realism' (Chambers, 2005: 211). This was encapsulated in the principle of 'farmer first' - prioritising poorer and marginalised people in the development process - which sought to enable people to express their lived experiences and own priorities themselves in order to direct local innovation and decision making. According to Chambers *et al.*, (1989), the challenge to achieve this was not an issue of capabilities nor social difference, but the absence of the necessary congruence in the relationships formed by NGOs and other development organisations and their willingness to participate in learning processes.

Although Chambers *et al.*, (1989) provided what subsequently became a populist approach to bridge the gap between development discourse and local realities, it was superseded by a more reflexive understanding of power and the politics of decision-making in 'Beyond Farmer First' (Scoones and Thompson, 1994). The production and diffusion of knowledge was conceived as a social process, which informs decision-making - always acknowledging the importance of social difference, power relations and social identities. The differences in access to and control of knowledge, resources and other processes, necessitated an analysis of the social, cultural and political aspects of relationships, including the relationships of power between NGOs and people at the local level. This has influenced more recent approaches to prioritising local level understandings and meanings in water and sanitation, such as Stirling *et al.*, (2007) as well as critiques of participatory ideology and practice (Kesby, 2007; Cooke and Kothari, 2001).

In order to understand how local knowledge could be understood and supported in the development process, Scoones and Thompson (1994) argue that knowledge itself may also need to be differentiated, as knowledge will mean different things to different groups. Knowledge systems in 'Beyond Farmer First', become multiple and diffuse as a result of different epistemologies, social differences, conflicting problem-definitions and needs:

'To remove local knowledge from the web of meaning and influence in which it arose and attempt to fit it into the constructive framework of western scientific rationality is likely to lead to significant errors in interpretation, assimilation and application'. (Scoones and Thompson, 1994: 19)

The need for cultural and historical sensitivity is best described in the words of Edward Said (1985), who argued that the power of Western, universal knowledge to rewrite the history of others, oppressed people's understandings and representations of their own history in the Middle East. He argues that Western attempts to re-interpret the Middle East, even if they offer alternative discourses against Orientalism, still ignore other knowledges and in doing so dismiss the other's culture, history and reality. Said (1985: 93) argued that the Middle East then only exists as 'communities of interpretation':

'... like the Orient itself, each designation represented interests, claims, projects, ambitions, and rhetorics that were not only in violent disagreement, but were in a situation of open warfare. So saturated with meanings, so overdetermined by history, religion, and politics are labels like "Arab" or "Muslim" ... that no one today can use them without some attention to the formidable polemical meditations that screen the objects, if they exist at all, that the labels designate'. Said (1985: 93)

In the 'Farmer First' approach (Chambers *et al.*, 1989), it was thought that through participatory processes, local knowledge could redefine the power relations between communities and development organisations. Participation, with its potential for learning, was often portrayed as being itself sufficient to achieve a more equal and just redistribution of power to marginalised individuals and groups. NGOs are partially defined by their relationships and their engagement with participatory processes to benefit recipients of interventions. However, the nature of participation is often contingent on stakeholders' goals and their assumptions about local processes and needs. There is potential for NGOs and other organisations to actively construct a certain reality in order to justify an intervention, even when they recognise the importance of making local people active partners (Cooke and Kothari, 2001).

In a case study of a NGO-led water programme in rural Chile, Garande and Dagg, (2005) observed the manipulation of participatory processes as a tool for gaining local support and resources, in order to increase programme efficiency. The study illustrates how problem framing by implementing organisations, in this case of water scarcity as a technical and financial problem, limited interests to more tokenistic participation. This approach to engagement concurrently reduced the potential for learning and the ability of the project to meet other learning needs expressed by community members.

An external evaluation of WWF's environmental education programmes (Fien *et al.*, 2001), further highlighted the potential for considerable disparity between the

interests, goals and values of the organisation and local participants. Education interventions were often implemented as a tool to secure local participation and support for environmental and/or social change, rather than to promote autonomous learning based on local participants' own needs and values. Conservation or environmental education programmes in the context of community natural resource management interventions often focus on learning as a vehicle for attitude and behavioural changes based on the goals of specific stakeholders (e.g. Van den Berg *et al.*, 2011). Scott and Gough (2008: 82), develop this further with a conceptualisation of environmental learning according to divergent 'categories of interests'. Their model illustrates the variability of the values and objectives held by organisations who are responsible for facilitating environmental learning and how these in turn influence the approach and outcomes that these interests suggest. Scott and Gough (2008) argue that this has significant implications for the degree of learner participation in the learning and in environmental and/or social change. How do NGOs then open up opportunities to engage with a diversity of knowledges, experiences, and values, in order to meet the priorities of groups who are experiencing marginalisation and poverty?

Where NGOs have engaged with local processes through dialogue and learning, interventions have been observed to be more responsive to local needs and priorities. Hailey (2001) relates the development of NGOs in South Asia to their ability to support local capacity, by building on local experiences and establishing relationships of mutual trust and respect. This observation may also relate to the values of those NGOs supporting social justice.

Local processes are also at risk of being displaced by interventions, where resources are created through relationships and other coping strategies, or indeed, intervention processes may maintain existing power relations and inequalities. This is significant, as it questions the assumption that water interventions bring about social change. Cole and Wallace (2005) argue that unless it is recognised that water has significant social meaning, which determines those who can access and use it and those who cannot, water interventions will remain instrumental in maintaining inequality. For example, looking at social changes following a community-based natural resource management project in Zanzibar, Saunders *et al.*, (2010) observe how the community committee that was established with the support of an NGO to manage local mangrove forests, concentrated decision-making and determined resource use within a small group. The capture of the committee by the minority was argued to reinforce historical, political relations.

The typology of water interventions in Table 2.0 was developed from a review of case studies and reports from NGOs, international organisations and academic research, (ranging from ecological anthropology to environmental education). These represented a diversity of assumptions and approaches in the water domain (and in some cases, also sanitation), including policy recommendations and interventions at a number of

levels as well as some global and regional assessments. The literature was purposely reviewed to identify global discourse, especially in relation to development concerns and charted other narratives around water, their problem-definitions, the identification of stakeholder and participants, suggested level of intervention and institutional arrangements. Water is often inflated to the level of a global crisis in reports by international organisations such as the UN World Water Development Reports. Mehta and Movik (2014) argue that problems are also frequently narrowly defined with little space for uncertainties and local understandings. Case studies within the academic literature were also reviewed for alternative ways of understanding water issues and more context specific examples. Many of the case studies occurred in areas predominantly characterised by water shortages; ranging from small-scale water harvesting projects, to public and donor-financed community-based irrigation schemes and large-scale dams.

The five different headings used in the typology of interventions in Table 2.0, ranging from 'macro-level' to mobilisation, reflect the dominant language that emerged in the literature, when describing water interventions. The typology characterises water interventions according to particular assumptions about the problem-definition, knowledge and water systems, the water users that are given privilege as well as valued uses of water and the needs that are being addressed. The typology attempts to illustrate differences in how water issues are framed, according to where in the typology they are viewed from. Depending on how knowledge and water systems and other processes such as participation are understood, interventions result in differing approaches to the management of water resources and so processes of change. Stirling *et al.*, (2007: 16) refer to this as the effect of framing:

'Framing refers to the particular contextual assumptions, methodological variables, procedural attributes or interpretive issues that different groups might bring to a problem, shaping how it is bounded and constituted and the relative salience of different factors'.

Although it is not included on the typology, there is also a temporal dimension to water shortages and interventions, for example, whether an intervention is a response to a drought or natural disaster as opposed to seasonal water shortages.

Table 2.0 Typology of water interventions

Typology	Characteristics of Intervention
<b>1. Macro-level interventions</b> <i>Water crises are due to increased water demands and require a single macro-level solution. Multi-levelled involvement of external agencies (both state and non-state actors)</i>	<b>Technologies and knowledge systems:</b> Macro-level focus on exogenous sources such as dams and large scale irrigation systems. Expert-led, focus on scientific and technical innovation. Externally financed (often short-term). <b>Water needs:</b> Often dichotomise water use into productive and consumptive use, resulting in a tendency for single-use planning and design, predominantly for irrigation and energy. <b>Participation:</b> The community is often excluded from the planning and design stage, which is dominated by the technological design specifications of donor and other implementing agencies. Communities participate by providing resources, such as voluntary labour and skills to reduce costs. Water resource management is often perceived as being separate from the social and cultural dimensions of water.
Examples of case studies	1. Mehta (1997, 2007) case study of the Sardar Sarovar Project, (a dam canal irrigation and hydroelectric project) in Kutch, India. 2. Faures and Santini (2008) FAO 'community – run' programmes.
<b>2. Demand management interventions</b> <i>The increased need for water in the midst of water shortages, requires markets and institutions to mediate the transactions</i>	<b>Technologies and knowledge systems:</b> Pricing systems and privatisation. The state is the custodian of water resources and grants permits / licences for water use. Other arrangements can be multi-levelled networks with public-private partnerships, donors, and national NGOs. <b>Water needs:</b> Water is seen as an economic good. There is a tendency for single-use planning and design, predominantly for irrigation and energy. <b>Participation:</b> Often focus on taxonomic groups (irrigators/ women / the 'poor'). Donor and government interventions, often at the village-level, introduce pricing systems and establish formal institutions to manage these. Water pricing has been shown to be exclusionary if not accompanied by subsidies
Examples of case studies	1. Toner (2006) Hai District Water Supply Project. 2. Gleitsmann <i>et al.</i> , (2007) Rural water supply project in communities in Mali

### 3. Governance interventions

*Poor management practices, the over extraction of water and competing demands, requires new forms of decentralised management. Interventions formalise institutional arrangements to regulate water use and set up new forms of associations and processes e.g. Integrated Water Resource Management (IWRM). This may involve a range of local institutions e.g. faith-based groups, village councils and local NGOs.*

Examples of case studies

### Technologies and knowledge systems:

Standardised, technical expertise. Focus on the technological control of water resources.

**Water needs:** Usually typified by a focus on water for productive uses e.g. agriculture, industry, energy, with a narrow focus on the related water-user groups.

**Participation:** Decentralisation - emergence of Community-Based Organisations, Water User Associations and other small-scale basin institutions. However, these institutions are often characterised by their hierarchical structures of management e.g. river basin authorities, catchment management agencies. IWRM has been espoused as being participatory but critiques reflect increasing incertitude about the approach, where it reinforces social inequalities and displace informal institutions.

1. Global Water Partnership Honduras IWRM
2. Conservation International Freshwater Strategy

### 4. Micro-level interventions

*The environmental and social costs of macro-scale interventions are too high. Technologies must fit the local environment and the priorities of recipients. E.g. small-scale watershed management, catching and harnessing water locally. State involvement and/or non-state actors such as local NGOs.*

Examples of case studies

### Technologies and knowledge systems:

Codify experiential knowledges of farmers and other representatives at the local level. Context dependent technological choices to meet locally defined needs and priorities that are sustainable.

**Water needs:** Single and multiple water needs

**Participation:** Aim to identify community needs and values to initiate the management of water resources through participatory approaches.

1. The Applied Research Institute - Jerusalem 'Palestinian Solutions to Palestinian Water Problems' (2008)
2. Jackson (1997) Rain-fed farming project, India

### 5. Mobilisation interventions

*Collective approaches are needed, based on local knowledge and local resources to ensure the sustainability of solutions.*

Community-led actions are typically independent of external institutions but may develop links with government agencies or NGOs who can provide support to facilitate community mobilisation.

Examples of case studies

### Technologies and knowledge systems:

Deliberative participatory engagement of diverse knowledges, experiences, values, perspectives values to explore alternative strategies, programmes, investments and technologies. Encourage networks for knowledge sharing.

**Water needs:** Multiple and integrated needs

**Participation:** The aim is for participatory engagement and collective action to address local water issues, also addressing issues of equity, power and rights.

1. Community-Led Total Sanitation Programme, Tearfund (Greaves, 2010)



The questions around the process of engagement at the local level and appropriate representation have implications for learning, as they suggest the need to learn from the community (e.g. Gleitsman *et al.*, 2007; Mahanty, 2002). Mehta *et al.*, (2007: 8) suggest that the '... struggle in the water and sanitation domain is both over access and meaning'. Therefore as an approach to understanding local experiences of water issues, they call for recognition of the broader meanings that people invest in water in order to bring about valued improvements in people's lives.

As an important part of people's environments, water can be understood to embody ideas, values and meanings, relating to socio-political, cultural and environmental processes (see Smaldone *et al.*, 2005; Stedman, 2003). Through everyday lived experiences and engagement with the world, people engage in meaning-making. Gough and Stables (2012) argue that meanings matter, as people respond in different ways to the meanings they create and in doing so, modify both their environment and themselves. In this way, the process of meaning-making is continuous. Greider and Garkovich (1994) argue that meanings reflect how people define themselves and so are embedded in and influenced by context. Sense of place frameworks connect these symbolic linkages between people and water to self-identity, knowledge, social relationships, culture and the human-environment relationship. In response to the idea that place-based understandings are important for inquiry and social action within the local environment, some approaches to natural resource planning and policy now recognise natural resource management as a conflict over a complexity of meanings (Davenport and Anderson, 2005). Such ideas have developed from interests in the human-environment relationship, emotional attachment to place in environmental planning and in the role that water plays in people's everyday lives, in particular due to its perceived importance in development and conservation.

In response to the historical tendency for water resource management to focus on the productive uses of water in agriculture and energy and as a technical issue, the social and cultural dimensions of water have gained increasing attention in research, (e.g. Crow and Sultana, 2002). Mehta *et al.*, (2007) argue that multiple knowledges, perspectives, and a diversity of meanings that people give to water, need to be part of appraisals and other learning approaches. This suggests the need to explore and engage with diverse experiences and some recent sense of place frameworks are attempting to do this by categorising the meanings that different groups bring to particular water issues (e.g. Jacobs and Buijs, 2011; Davenport and Anderson, 2005).

Learning approaches have been developed specifically in the water domain (e.g. Gleitsmann *et al.*, 2007), in natural resource planning (e.g. Davenport and Anderson, 2005), as well as environmental education (in particular socially constructed environmental education) (e.g. Kudryavtsev *et al.*, 2012). Local experiences and meanings are helping to inform theory through empirical research (e.g. Mueller Worster and Abrams, 2005), and are argued to facilitate a better understanding of the issues, while providing opportunities for NGOs to initiate dialogue. However, not all



approaches address how this process can be facilitated and how it can account for framing effects, power relations and uncertainty. Stirling *et al.*, (2007) from the STEPS research centre at the University of Sussex, offer evidence for one approach to participatory engagement and decision-making processes with a case study of HIV/AIDS prevention programmes. They argue that programmes traditionally focused on behaviour change through information, education and communication strategies until changes began to occur in how HIV and AIDS were framed. They discuss the International HIV/AIDS Alliance which worked with its partners and NGOs to create spaces in which community members could identify factors that increased their sexual vulnerability from their own experiences. By opening up how HIV and AIDS can be framed, other factors could be addressed with greater preventative effects in the local context. Although the case study example is not related to water interventions, it has been included to emphasise the importance of dialogue and reflexive practice which engages divergent knowledges, experiences and perspectives. Irrespective of the methods used, Stirling *et al.*, (2007: 16) argue that the contextual assumptions and positioning will always affect the outcomes.

The STEPS centre's approach offers an example of broader systems thinking that understands the need for synergy between multiple actors and disciplines. This interdisciplinary engagement enables dialogue and understandings of interdependent social, technological, environmental process to emerge, in particular historical and cultural contexts. There is an emphasis on critical reflexivity, inquiry and practical application that can lead to change in the local context. Furthermore, the creation of 'new knowledge' through interdisciplinary inquiry can also have wider implications for change in society (e.g. Gough *et al.*, 2016).

According to Sterling (2014) and others (e.g. Lotz-Sisitka *et al.*, 2015), the uncertainty, complexity and change that characterise the intractable social and environmental issues today, necessitates a more central role for learning in policy, and in the strategies that are developed to address these issues. In a marked shift away from thinking about learning in terms of the acquisition of skills and knowledge to address specific issues, Sterling (2014: 98) argues for the idea of learning as a 'change strategy'. Learning is described as an iterative and participatory process that involves dialogue and knowledge sharing with the intention of building on existing knowledge and skills, while also creating dissonance by introducing alternative perspectives, knowledge and understandings (also see Scott and Gough, 2004). Sterling (2014: 98) argues that this 'higher order' learning involves an important change in people's frame of reference towards a more relational, holistic and connected worldview.

### 2.3 Sense of place in local understandings

'Places underlie how we make sense of the world ...' (Davenport and Anderson, 2005: 627)

As a way of understanding water as an important aspect of people's everyday lived experiences and environment, locally held water meanings have been explored through place-based approaches (e.g. Jacobs and Buijs, 2011; Davenport and Anderson, 2005). Central to such approaches, is the idea that local needs and experiences of place affect how people see the world and how they interact with it. According to Movik and Mehta (2010), this approach could help understandings of how water issues are framed, so shaping the type of intervention and its outcomes for wellbeing. However, there are conceptual and empirical nuances. These relate to sense of place as (a) an intrinsic part of local understanding and (b) as a process which frames understandings, with ensuing value for learning. The nuances of the former kind have implications for relatedness (e.g. Scruton, 2012). The latter kind is familiar to cognitive understandings of sense of place (e.g. Cheng et al., 2003), understood as a continual and dynamic process whereby information (provided by social, cultural, political and environmental processes), informs how people define themselves, act and relate to the environment and others.

Sense of place theory has evolved from place-based notions of attachment (e.g. Low, 1992), to the symbolic existence of place and place-based meanings in social constructionist frameworks (Jacobs and Buijs, 2011). Fundamental to the multiple understandings of sense of place, are people's complex connections to their environment. Davenport and Anderson (2005) describe sense of place as part of the human-environment relationship, relating to physical and social processes, experience and interpretation. The natural, social and cultural dimensions gives form to these experiences and human interactions with place varies (e.g. Stedman, 2003). Meaning unites these dimensions in many place-based frameworks (e.g. Cheng et al., 2003). This echoes Sahlins' (1979) theory of the inseparability of the material and the social. The material embodies beliefs, values, norms and meanings and these are maintained, negotiated and reproduced through social processes. These meanings are seen to be part of the cultural repertoire that groups can draw upon to negotiate their place in the environment:

'... the action of nature unfolds in terms of culture; that is, in a form no longer its own but embodied as meaning...The natural fact assumes a new mode of existence as a symbolized fact, its cultural deployment and consequence now governed by the relation between its meaningful dimension and other such facts. All of this within the material limits'. (Sahlins, 1979: 209)

The work of Keith Basso (1996a and 1996b) provides further insights into the idea of place-making as a way of constructing and negotiating social identities and cultural norms and beliefs. Through the accounts of the residents of a Western Apache village,

Basso's ethnography (1996a), reveals how individuals express a knowledge of place while concurrently expressing an understanding of themselves and a shared way of life. The two processes are argued to be inextricably linked. It is through the everyday interactions that Basso describes in his ethnography, that we witness individuals engaging with place as they reflect upon and make sense of their experiences. Their stories are deeply rooted in the local landscape. Through this process, the residents are argued to maintain and reproduce place-based meanings and cultural norms and beliefs:

Thus through a vigorous conflation of attentive subject and geographical object, places come to generate their own fields of meaning. So, too, they give rise to their own aesthetic immediacies, their shifting moods and relevancies, their character and spirit. Even in total stillness, places may seem to speak. But ... such voices as places possess should not be mistaken for their own ... they yield to consciousness only what consciousness has been given them to absorb. Yet this may be quite considerable, and so it is, as everyone knows, that places actively sensed amount to substantially more than points in physical space ... places also provide points from which to look out on life, to grasp one's position in the order of things, to contemplate events from somewhere in particular. (Basso, 1996b: 56)

A more dynamic understanding of a dyadic and changing relationship between society and the natural environment (as a set of meanings attached to a 'natural reality'), has become explicit in recent sense of place frameworks, where both society and the natural environment have the ability to initiate and respond to change (e.g. Cheng et al., 2003). Learning needs are implied in this process, as change is argued to necessitate the renegotiation of place meanings and relationship to place (e.g. Measham, 2007; Davenport and Anderson, 2005). Learning needs can subsequently develop from the natural and social environment, (whether learning how to interact with the water resource or others using the resource).

Sense of place perspective contends that people assume and give places values and meanings through lived experiences and learning (learning to live in a place and to participate in a social form of life). Through this process of meaning creation, people develop an attachment to place. In an attempt to disaggregate the influence of the social context from what they refer to as the natural environment, Beckley et al., (2007) conclude that place attachment often involves complex interactions with both. The natural environment is argued to take different roles and meanings according to how individuals and groups understand their relationship to others and to the environment, as people are located within a number of social contexts and environments. Davenport and Anderson (2005) refer to this process of defining ourselves as place identity. In this way, Greider and Garkovich (1994: 7-8) define 'landscapes' (natural environments which are given meaning), as '... cultural definitions of ourselves'. They become a way of being and influence both actions and responses to

the world (also see Manzo, 2005; Long and Long, 1992). Studies which adopt place attachment as synonymous to sense of place, understand place attachment as comprising this concept of place identity as well as place dependence - the ways that places meet multiple needs. It is often assumed that place attachment is a 'positive bond' (e.g. Mesch and Manor, 1998: 504), and that positive place attachment becomes a motive for environmentally responsible behaviour (e.g. Measham, 2007).

Mueller and Abrams (2005) develop the conceptual framework further, with a more relational understanding of sense of place and its role in the development and maintenance of identity. In a study of the life histories of organic farmers and fisherman in New England, they explore the development of sense of place through life experiences. They assert that '... relationships were crucial to the participants' ability to learn about ecological and social knowledge, to develop place-based identity and to strengthen their place attachment' (Mueller and Abrams, 2005: 528). These relationships include those with the natural environment as well as more immediate social relations (within the household and community), and more distant ones. If the relationship between societal wellbeing and the natural environment is not explicitly recognised, then the pursuit of wellbeing at individual and collective levels may prove to be unsustainable.

With some notable exceptions, place-based approaches often leave little consideration for social difference and political aspects of place relationships. An exception, is Manzo's (2005) study of the multidimensionality of emotional relationships with place. Manzo (2005: 69) asserts that '... in looking holistically at place experience and meaning, we can see that experiences of belonging exist alongside experiences of alienation, that identity exists within the context of difference and that dwelling includes movement and change'. Social differences and divisions are as important as considerations of social connections and may conceivably also shape a person's sense of self.

As discussed, the ability to actively construct place-based meanings, recognises that social groups can capture and negotiate certain meanings. This ability however, depends on a person's position in society, in relation to their gender, class, race or age. People's understandings can be influenced by culture and as Smaldone *et al.*, (2005) contends, all meanings will not be equally experienced. An example can be drawn from Coles' (2005) consideration of the interrelationships between water, gender and culture in ethnic minorities in Sudan. Here, cultural and religious norms relating to gender roles and responsibilities, restricted the ability of women to respond to water scarcity. Coles attributes this to both human-induced and environmental change. Periods of drought necessitated a renegotiation of these societal norms, as they limited women's movements outside of their household and village. As water sources became far and few, women were less able to meet their responsibilities for domestic water acquisition and management. Coles (2005) observes the renegotiation of societal

norms to enable the gradual acceptance of the adoption of this responsibility by boys, further reducing the ability of women to form relationships outside of the household.

Scruton (2012: 3) presents a theory of 'Oikophilia or the 'love and feeling for home'. Home is presented as a collective idea, believed to be intrinsic to our experience as humans. Through a shared connection to the past and 'shared love of a shared place', Scruton (2012: 25) argues that a collective sense of responsibility for the environment and future generations will arise. In Scruton's (2012: 376) words, 'the aim is to establish the conditions under which people manage their own environment in a spirit of stewardship ...'. Scruton (2012: 22) describes this 'love for one's home' as a positive attachment or bond but neglects experiences of displacement, threat and exclusion. Groups may have conflicting ideas about territory, (Scruton's 'object of love'), which may implicate the exclusion of certain communities and the destruction of homes, to achieve one group's vision of territorial integrity (e.g. the hidden history of a place).

Scruton (2012) places great emphasis on certain values (altruism, loyalty, gratitude and piety). This however, could create conflict between the pursuit of individual needs and the need to participate within social groups or a social life to maintain these values. The ability to interpret these values will also again depend on where an individual is positioned within society. Such cultural values and beliefs therefore influence what and who is considered to be significant or meaningful (McGregor, 2007; White and Ellison, 2007). Scruton (2012) critiques NGOs for their failure to support local needs but without himself suggesting an alternative process of enabling individuals to come to identify what they value for themselves.

In an attempt to develop frameworks away from archetypal concepts of sense of place, Mueller and Abrams (2005: 527) argue for the sense of place framework to be defined through people's lived experiences and understandings. Much of the research in this area is rooted in phenomenology, recognised by Manzo (2005) as a necessary '... return to the everyday lifeworld of lived experience ...' in order to understand the multifaceted and complex connections that people have with place. However, while not denying that meaning matters, Gough and Stables (2012: 369) assert that the process of meaning-making will be 'constrained ... by physical resource limits'. For example, meaning alone cannot make harsh and unproductive environments flourish.

Through place-based approaches to natural resource management, it is proposed that people's own priorities, understandings and experiences can be understood in relation to a conceivably diverse range of issues. Davenport and Anderson (2005) assert that this approach can facilitate the important process whereby NGOs come to understand different and often competing problem-definitions from people's own experiences.

Although there are generalised ideas about sense of place, the progressive shift towards locally defined concepts of sense of place, prioritise place-based meanings due to the symbolic connections to self, others and the environment. As discussed, place

meanings can include place attachment but sense of place is no longer limited to this (Jacobs and Buijs, 2011: 3):

'Sense of place, understood as the total collection of meanings that people assign to a particular place ...'

The meanings that people give to water are considered to be multidimensional, incorporating the social (e.g. relationships, social identities), cultural (norms, beliefs and values), political, environmental and material (e.g. livelihood activities and education). Sense of place frameworks have explored place meanings as a way of understanding local framings and how interventions will initiate change. This represents a response to the current research agenda to identify 'what innovations and pathways open up people's access to water and sanitation?' (Movik and Mehta, 2009: 7) and the emphasis on sharing knowledge and informal learning.

Lyla Mehta's (1997) study of water scarcity in Kutch in West India, found that Kutchi identity was closely shaped by water and in particular, perceptions of periodic drought, which led to a dependency on government interventions. In a joint paper by Stirling *et al.*, (2007), they argue that these interventions were built on narratives that portray scarcity as a natural phenomenon, relating to decreasing rainfall and longer periods of drought, (despite there being no rainfall data to support these claims). This idea of water scarcity is argued to justify a focus on supply-solutions, with the government provision of tanks during periods of drought for irrigation, while ignoring political and social factors. As a result, the men in the village and members of the higher castes were observed to benefit from these interventions due to social differences that determine access to and control over both water sources and land. Stirling *et al.*, (2007) conclude that the *idea* of water scarcity is actually socially generated as different social actors can frame the problem according to different interests and often political ends. This is not meant to deny that shortages of water exist, but makes the distinction that the biophysical aspect of water scarcity are experienced differently and involves historical, social and political processes.

Although many place-based approaches to natural resource management now assert the need for an '... integrated understanding ... of place meaning and the setting to which these meanings are ascribed' (Davenport and Anderson, 2005: 630), Mehta's (1997, 2007) case study emphasises the need to understand the role that these meanings play in everyday lives, in order to identify the process whereby meanings are created, sustained and negotiated to maintain power relations and certain interests. As discussed, meanings will not be experienced equally as meanings reflect the self-definition of individuals and groups. Certain groups have self-interests to use their knowledge to frame problem-definitions and to establish institutions to manage water which consolidate these power relations (Chengi *et al.*, 2003). This relates back to Sahlins' (1979) theory of the inseparability of the material and the social and the ability of groups to draw upon meanings to meet recurrent challenges and maintain social life.

## 2.4 Connecting water and sense of place

The research agenda to reconnect the discourse on water issues with local needs and everyday lived experiences, asserts not only the need to understand local perspectives and priorities but the ability to respond to them (Mehta, 2000). Place-based approaches to natural resource management have contextualised water issues through local expressions of meanings and the connections between these (e.g. Manzo 2005; Smaldone *et al.*, 2005; Low 1992).

The multidimensional meanings that people invest in water and the importance of these meanings for people's everyday lives, have been explored as a way of identifying people's own priorities, understandings and experiences (e.g. Davenport and Anderson, 2005). Learning is implicit in this process, both for NGOs who are active in water interventions and (re)present water issues and local needs as well as for recipients. Mueller and Abrams (2005) argue that place-based meanings can help to contextualise learning at the local level and subsequently enable people to construct knowledge in ways that enable them to inform decision-making processes. These place-based approaches to environmental education and natural resource management, contribute towards a greater appreciation of the purpose of NGO learning in this process of balancing coordination and local control: a purpose, which appeals to the very root of NGOs' objectives and *raison d'être* in the development process.

Locally defined concepts of sense of place that prioritise place-based meanings, go beyond the material functionality of water to relational and symbolic aspects. Together, these multiple aspects can help to develop an understanding of the factors which both facilitate and restrict people's abilities to meet their needs (and the needs of others). Water research in the field of ecological anthropology positions relational aspects fairly centrally in understanding water resources and management, as relationships determine both access and use (e.g. Kuruppu, 2009). Water is described as being situated in a specific cultural context, which influences how people understand resources (the meaning the resource has), and how they are utilised through relationships. These dimensions then become informational resources, understood by Cheng *et al.*, (2003) to inform how people act and define themselves and others.

Due to the symbolic connections of water to self, others and the environment as understood by sense of place perspective, place-based approaches to natural resource management have created various meaning-based frameworks to connect these aspects of place, such as concept maps (e.g. Jacobs and Buijs 2011; Davenport and Anderson 2005). Represented in this way, to capture how each aspect co-constructs the other, place-based approaches to water issues provide an entry point into the social, cultural and political context of people's experiences of water issues. Such consideration is arguably essential for water interventions which can unintentionally reinforce inequalities and where external prioritisations can tenuously relate to local realities (Garande and Dagg, 2005).



Initial theoretical conceptions of sense of place have been further developed as a consequence of empirical research, which has explored different categories of place meanings, for example, place dependence and what it means for people and identification with place (e.g. Jacobs and Buijs, 2011). This research uses sense of place perspectives and the categories of place from different empirical studies, to understand emergent themes from case studies and research around water resources and water resource management.

The headings in Figure 2.0 represent the language which strongly emerged from these studies around the range of connections that people develop with their environment. They offer a way to identify what is meaningful to social actors themselves in relation to water and the interrelationships between these meanings. Additional studies were then reviewed in the context of these unifying concepts between sense of place and water, in order to deepen an understanding of the different dimensions of water and how it is connected to place.

The headings used in the framework in Figure 2.0 (e.g. the symbolic), represent the different meanings and/or processes whereby water becomes meaningful, and illustrate the connections between experiences of place and water. Examples of the meanings that are ascribed to water are described under each heading, for example, water as 'sustenance' and water as a 'gift' in relation to 'the symbolic'. The section below, starting at 2.41, elaborates on these meanings and provides examples from the literature which shaped the development of the categories.

Different types of water interventions (Table 2.0) can either neglect or include particular meanings that are represented in the meaning-based framework in Figure 2.0. For example, in relation to the typology of water interventions in Table 2.0, 'demand management interventions' clearly focus on the economic dimensions of water that arguably do not capture local experiences and knowledge of water use in a holistic way. In limiting understandings of water use and water users according to place dependence and the dichotomy of productive and consumptive needs, these interventions can ignore the symbolic dimension and social relationships that determine access to water and water use, and the interactions between them. Interestingly, each type of water intervention perceives place differently, whether as a geographical space represented by the watershed in Integrated Water Resource Management ('governance interventions'), or as socially constructed, fluid and dynamic spaces that are claimed by different communities of practice in 'mobilisation interventions'.



Figure 2.0 Meaning-based framework

Water as ...	<b>Sense of Place as ...</b>
	<b>The Symbolic</b> <i>life / gift / sustenance</i>
	<b>Relationships</b> <i>belonging / attachment / power</i>
	<b>Identity</b> <i>self / collective / imagined</i>
	<b>Place Dependence</b> <i>security / social practices / economics</i>
	<b>Activity</b> <i>production / livelihood activities / income and assets / education and skills</i>
	<b>Nature</b> <i>nurturer of human fulfilment / natural capital / conservation / conflict / teacher</i>
	<b>Heritage</b> <i>shared histories / inheritance / stewardship / responsibilities</i>
	<b>Knowledge and adaptation</b> <i>technology / informal and formal systems / ecological and social knowledge / knowledge sharing / participation / local innovation</i>
	<b>Uncertainty</b> <i>dynamic processes and systems / temporal and spatial variability / location of water as an input and as an output</i>

## **2.41 Water as a symbolic resource**

Water has been observed to assume symbolic importance as a gift, often spiritual in character, that sustains life (e.g. Joshi and Fawcett, 2005). In a study of furrow societies in Tanzania, Vavrus (2003) describes sustainable systems of water management, informed by historically embedded meanings of water as a sacred resource. In this way, Kuruppu (2009) asserts that water becomes a significant part of the cultural life of the community both fulfilling and maintaining cultural beliefs. These cultural understandings shape people's view of themselves and the world and are reified through social practice. For example, place-based meanings can be created and reproduced through folklore, memory and religious practice. Studies such as those by Joshi and Fawcett and Kuruppu (2009), contribute to an understanding of water, like place, as a symbolic resource that reflects what a group defines as the relationship between themselves, the environment and others. Greider and Garovich (1994: 9) refer to this phenomenon as 'meaning over material', in so far as the social, cultural and environmental dimensions all become subsumed in these symbols. According to this view, the material dimension of water can only be understood in relation to cultural and social processes or the symbolic dimension (Runk *et al.*, 2007). Returning to Mehta's (2007) conception of the socially constructed nature of water scarcity, she observes how water comes to embody the social identities of water users in Kutch (a region in India), and their beliefs, '... as a metaphor to express difference'. In this way, meanings are actively produced, reproduced and negotiated through engagement with the environment and through social relationships, to maintain the norms, values and beliefs of society. It is important to recognise that the motivations behind the ascription of meanings will therefore be multiple.

## **2.42 Relationships (in the context of water and meaning-making)**

The relational dimension of water personalises social capital, as it considers how relationships shape a person's sense of self in addition to their instrumental value. Scruton's (2012) theory of Oikophilia, also reveals the need to affiliate oneself with others (for 'belonging'), owing to the derivation of one's sense of self in relation to others. This is often embodied in the idea of rootedness to place, seen as a collective phenomenon (e.g. Abufarha, 2008). However, the existence of inequalities in experiences of place, discussed by Manzo (2005), is significant as it implies that social differences and divisions are as important as considerations of social connectivity, and therefore need to be explored, taking account of gender, ethnicity and religion. Rather, Manzo (2005) argues that place is a spatial metaphor for relationships and ways of being.

The sense of place framework developed by Mueller and Abrams (2005), corroborates with the view of the significance of relationships in everyday lived experiences of place and water. Sense of place is understood to emerge through relationships and

particularly through participatory processes, where shared knowledge and ways of knowing become an act of belonging. Relationships become an opportunity for learning for the fisherman and organic farmers who were interviewed in their study, as it enabled them to participate in a way of life and not just a livelihood activity. This process is argued to be fundamental to the development of place attachment. However, returning to the studies by and Mehta (2007) and Manzo (2005), power relations will influence the everyday lived experiences of place and water that Mueller and Abrams (2005) refer to. Social actors are rarely equally positioned to negotiate meanings and this can subsequently undermine the ability of some individuals and groups to meet their own needs. This may have further implications for the connections that people develop with place.

### **2.43 Water as identity**

The claims people make on water and those they give priority to, relate to social identity and cultural norms that identify certain roles and responsibilities (Mehta, 2007). Wenger's (2000) concept of 'communities of practice' contributes to this understanding, whereby community members are identified by shared understandings of what it is that they do and the meaning that this has for their lives. In order to participate within specific (and normally multiple) social groups, people must align themselves with different norms, beliefs and values. This is envisaged as a key component, not only for collective action but for collective influence. The WWF's La Cocha Project in Colombia, provided funding and technical assistance to a community network, which had formed to develop alternative livelihoods in response to the degradation of the local wetland environment. This was seen as a form of adaptation, required to meet needs locally and to reproduce their way of life for future generations.

However, Greider and Garkovich (1994) contend that power relations will influence how a group defines itself and therefore how water issues are defined. Therefore, the ability to negotiate identity when confronted with social and/or environmental change and uncertainties will again not be equally experienced by all groups.

Studies by Davenport and Anderson (2005) and Cheng and Mattor (2010) found that place and the specific meanings that it assumed, also function to sustain identity. Davenport and Anderson (2005) conclude that natural resource management and planning need to understand the process of negotiation that interventions will initiate of both meaning and identity.

When confronted by change and uncertainty, place-based meanings can serve to protect identities or in the process of re-inventing them. Said (2002) argues that imagined geographies and histories can help to create a coherent collective identity and support a group's claim to a place. This connects with the argument made by

Greider and Garkovich (1994), that the existence of conflicting claims to a place can deny others their assertions of identity and history.

## **2.44 Water and place dependence**

“We are here and our water is there ... on this side of the wall we suffer from lack of water” (Quoted in Amnesty International's report entitled 'Troubled Waters - Palestinians Denied Access to Water', 2009: 46)

Measham (2007: 340), values sense of place as a framework for understanding the relationship between society and the environment. Place dependence has become a component of place attachment, as the degree to which a place meets certain needs (Kudryavtsev *et al.*, 2012). This is intended to support the concerns and priorities identified by the people whose lives are affected by interventions (Davenport and Anderson, 2005). Mueller and Abrams (2005: 527), go further, arguing for the need to '... redefine the sense of place framework as it is enacted and embedded in their lives'.

Despite exploring ways to identify what place dependence means locally through empirical research, the dominant narratives in current global discourse emphasis water's role in international development issues, such as food security and economic productivity. Such sector-based prioritisations of local need are being challenged by calls for 'people-based prioritizations' of a broader range of water needs (Van Koppen *et al.*, 2006: 15).

Approaches to water resource management have often been supply-led (e.g. Gleitsmann *et al.*, 2007). This neglects important social practices and the symbolic dimensions of water as well as obscuring the actual process whereby people come to identify needs for themselves and the reasons for their prioritisation. As previously discussed, the needs that people prioritise for themselves will be associated with particular roles and responsibilities, but also with entitlements and rights (White, 2008). Subsequently, socio-political, cultural, environmental and economic processes can act to undermine the ability of individuals or groups to meet these needs. Therefore people's prioritisations need to be explored beyond their identification due to the embedded nature of values and priorities within specific contexts.

## **2.45 Water as activity**

'Water as activity' is intimately related to how water is framed in global narratives. Mehta (2000) describes the dominance of economic narratives in the water domain which conflate water scarcity to a crisis at the global level. This global narrative frames water as an economic good and a limiting factor in international development (e.g. Global Water Partnership, 2000). Productive activities are often framed in relation to

income, assets, education and skills and can neglect the important relational aspect of livelihoods, which can determine water access and use.

Water development or 'water productivity for the poor' (Movik and Mehta, 2009: 4), focuses on the economic linkages to water, its functionality, productivity and sustainability. This narrative is closely linked to ideas about security, particularly how to enhance water security and hence food and livelihood security (e.g. Conservation International 2009). For example, the WWF Working for Wetlands Project in South Africa, employs local people to restore wetland habitats and builds local capacity for the diversification of livelihoods due to the observed destructive removal of wetland areas for agriculture.

Through this process of framing water as an economic issue (to prevent instability, conflict and uncertainty), the economy is separated from socio-political, cultural and environmental processes. Yet, livelihoods relate to the interrelationships between these (Mehta *et al.*, 2001). A focus on economic narratives, also ignores the multiple ways that people value water and make decisions in their daily lives (Mehta, 2000). This requires an understanding of social identity as a way of meeting the need for competence (e.g. fulfilling various roles and responsibilities) and relatedness, as people may align themselves with different norms, beliefs and values in order to participate within specific and/or multiple social groups.

Chengi *et al.*, (2003) argues that livelihoods as forms of production, are only one way in which people are connected to place, returning to the significance of meaning in natural resource use and management. Place-based research suggests that the human-environment relationship is closely related to identity and as such, water shortages can create uncertainty about self- and group- definitions. Both Davenport and Anderson (2005) and Smaldone *et al.*, (2005) observe the importance of this connection, as place can embody the values held by people, such as autonomy and freedom. However, when a group is able to prioritise certain meanings of water, for example, for irrigated agriculture or energy generation, these meanings will impact on social, economic and environmental processes.

## **2.46 Water as nature**

Place-based meanings around nature have predominantly been explored in the context of scenic natural areas, many of which hold value for tourism-related development. Place attachment has featured strongly in this research with a concern for competing demands and pressures on the natural environment. In Davenport and Anderson's (2005: 632) 'web of river meanings' framework, participants used narratives to describe the importance of the river environment for solitude, freedom and escape. They also highlight the importance of both ecological and needs-related dimensions of water, often neglected in understandings of the human-environment relationship,

which in this case study, was represented in the valuing of pristine nature and the protection of ecosystem services. Nature can then function as the nurturer of human fulfilment.

In contrast, the narratives emerging from NGO reports in contexts where people are dependent on ecosystem goods and services to meet essential basic needs (natural capital), are remnant of the Tragedy of the Commons. A number of case studies imply a global crisis and potential ecosystem collapse due to human activities, which conflict with conservation goals and undermine both environmental and social processes. Conservation International (2010), for example, discuss how local livelihood activities such as agriculture and pastoralism threaten to undermine the environment's capacity to support people living in many wetland areas due to poor land use practice and management. Diamond (2005) follows the trajectories of environmental damage which have undermined society after society, throughout history. Many case studies involve a number of contributing factors with complex dynamics and feedbacks, including climate change, poor water resource management, deforestation, invasive species, biodiversity loss and population growth. Most of these are present in the WWF 'Freshwater Trends and Projections: Focus on Africa' (Revenge and Cassar, 2002), where climatic factors, which interact with the over-extraction of water for irrigation (argued to be the highest use of water in Africa), overgrazing by livestock and population growth, are resulting in increasingly water scarce areas.

Many of these dominant narratives partly remove the role of humans in water scarcity and/or make it a universal phenomenon within the context of climate change, so that the problem-definition becomes one of education to inform people and to support conservation, governance and market solutions. Movik and Mehta (2010) raise concerns that when water shortages are framed in this way, it becomes a crisis that only universal technologies and systems can correct. In the process, they argue that political issues are ignored, in particular those relating to equity and rights.

There is also an absence of the role of the natural environment in placing constraints and initiating change as well as the learning needs that arise as a result (the idea of 'nature as teacher'). For example, Stedman (2003: 671) argues that although social constructions are important in understanding place, 'the local environment sets bounds and gives form to these constructions'. This recognition is arguably essential in relation to the challenges and uncertainties of environmental change in the sense that environmental and social change will necessitate the continual development of knowledge and skills as well as our abilities to engage with divergent meanings.

## **2.47 Water as heritage**

'It is through places that people can make connections between a whole collection of feelings and experiences in the present and the past.' (Manzo, 2005: 78)

Heritage symbolically links people with place as shared and contested meanings which develop through lived experiences (Smaldone *et al.*, 2005). These become shared historical cultural narratives of access to resources, rights, entitlements and identity as well as the sacred and moral order. Mtisi and Nicol (2003) identified certain groups who had historically been involved in controlling access to water in Zimbabwe. These groups evolved specific development narratives in alignment with national policies, in order to support their claim over water resource use and management.

The concept of heritage as a shared idea can erase histories of loss or destruction of land and community through displacement or alienation. Hence the idea of inheritance and collective ownership, discussed by Scruton (2012) as motives for conservatism and environmental stewardship, may hold very different meanings for different people. Kudryavtsev *et al.*, (2012) maintain that collective memories of events can positively or negatively influence place attachment, requiring a narrative approach to understanding the significant experiences which define place meanings. Connections to place are therefore '... fluid, shifting and transactional ...' (Smaldone *et al.*, 2005: 412) over time and space.

## **2.48 Water as knowledge and adaptation**

Water interventions involve the transfer of technology, knowledge and resources, whether these promote technical expertise and the technological control of water, for example in large scale irrigation systems or locally developed technologies for water harvesting and conservation. This process can act to undermine local knowledge and relationships, especially if the outcome is standardised solutions and definitions (Rocheleau, 2001; Long and Long, 1992). Furthermore, technological choices for interventions are inherently political and will affect social arrangements, meanings relating to water and environmental processes (e.g. household technologies for bathing and washing) (Cole and Wallace, 2005).

Research has shown that people develop flexible informal systems and methods of coping during times of water shortages, which are often difficult to separate from social relationships (e.g. Toner, 2006). Therefore it is important to recognise the importance of both ecological and social knowledge. Amnesty International (2009) reported in the OPT how people diversify water resources and livelihoods as coping strategies but often resort to using sources of poor quality and are dependent on borrowing or sharing water. However, social practices and cultural values can limit

individuals and groups adaptive capacity to access and use available resources, including knowledge and social networks (see Kuruppu, 2009). As Long and Long (1992: 27) discuss, 'knowledge processes are embedded in social processes that imply aspects of power, authority and legitimation; and they are just as likely to reflect and contribute to conflict between social groups, as they are to lead to the establishment of common perceptions and interests'. This is not widely recognised in sense of place frameworks.

Although Movik and Mehta (2009), perceive significant challenges to improving access to decision-making and knowledge sharing and the benefits from these, they strongly advocate local innovation and diversity. Local resources and local knowledge are argued to be central to determining the contextual appropriateness of interventions and for developing locally suitable approaches to water issues. With its regard for local development and social agency, this approach to maximise participation and ownership at the local level, reflects alternative development perspectives that support the concerns and priorities identified by people at the local level and the actual process of coming to identify these for themselves and achieving them.

These issues raise questions about the nature of participation in water interventions and its meaning at the level of the community; how knowledge is gathered to inform decision-making and how attention to local knowledge and understandings can redefine the relationship between water users at the local level and the NGO?

## **2.49 Water as uncertainty**

'... we don't know what we don't know.' (Mehta *et al.*, 2001: 2)

Not only do water interventions confront multiple understandings and problem-definitions but also dynamic systems characterised by interdependence, uncertainty and change over space and time (Leach *et al.*, 2007). NGOs assume roles in the context of uncertainty and scarcity, which necessitate analysis of the contexts in which they operate. Mehta *et al.*, (2001) argue that such complexity and uncertainty need not be disabling, but can, rather, enable processes of negotiation. They discuss uncertainty in relation to *ecological uncertainties*, as the unpredictability of ecosystems; *livelihood uncertainties*; the incomplete nature of knowledge and the multiple meanings that natural resources assume, known as *knowledge uncertainties* and *social and political uncertainties* due to the ever changing context of intervention.

Rocheleau (2001), looked at the interplay between periods of drought, state interventions and community responses in the form of informal institutions, which utilised social relationships and cultural repertoires. Women in communities in Machakos, Kenya, formed social networks in response to environmental and wider political change, in order to access resources and to align in solidarity with other women, so they could negotiate engagement with state actors (a relationship



previously denied to women). Rocheleau's analysis (2001), attests how people adopt multiple and changing social identities as well as the continual negotiation that occurs with communities and other organisations and between the local, national and global levels.

Place meanings are also dynamic over time and space, as understandings of self, others and the environment change. How the past is read and hopes for the future will also change as people construct an understanding of present experiences which shape their understanding of the past. These dimensions are encapsulated by Cheng *et al.*, (2003: 96) as '... layers of identity and meaning that connect people to places'.

## **2.5 Conclusion: Water as wellbeing**

'We don't choose to live like this: we would also like to have beautiful homes and gardens and farms ...' (Local resident of the West Bank quoted by Amnesty International, 2009: 42)

There is little dispute that 'water and sanitation are essential for all aspects of life, wellbeing and productivity' (Mehta *et al.*, 2007: 1). Locally defined understandings of sense of place, which recognise the multiple dimensions of water, provide a synergy between socio-political, cultural, environmental, and economic issues. This approach emphasises the importance of the connections between the dimensions and their interdependency. Such a multi-dimensional conceptualisation of water, as advocated by Mehta (2000), relates to broader concepts of human development and person-centred approaches to wellbeing (e.g. McGregor, 2007). These are defined by a person's own understanding and experience of wellbeing informed by the context.

According to White (2008), locally based understandings of wellbeing favour participatory learning and action. In order to enable decision-making based on a person's priorities and values, approaches refocus attention on what people are able to do in their everyday lives. Using terminology familiar to Sen's (1993) conception of agency, as the ability to actively shape and critically reflect on one's life, agency is envisaged as a key component, not only for collective action, but for individuals' 'becoming', as the individual recognises that their agency can actually realise change (e.g. Walker and Unterhalter, 2007).

The initial sense of place disaggregates that were found to connect sense of place and water, provide the key framework for this research and will be used to critically examine the significance for learning of freshwater: as a physical necessity, as a metaphor and as a source of meaning. Although the framework offers analytical concepts to explain the connections at fundamental levels, the research will privilege people's categories and understandings of water at the local level.

## **2.6 Water, sense of place and the implications for learning**

A preliminary review of a small number of case studies suggests that the initial categories of sense of place, do have traction in practice and so merit further investigation. The case studies were reviewed in the context of the categories which were found to link sense of place and water. These categories provide analytical concepts for exploring how water issues are understood and the assumptions that are made about local processes and needs.

In reference to the typology of water interventions in Table 2.0, there appear to be implicit differences around the social processes through which perspectives, knowledges and values at the local level are explored to inform decision-making and so intervention outcomes (if these are implied at all). This research is interested in the role of learning in achieving greater contextual diversity in water interventions which meet the priorities of participants and their communities. In particular, this research questions how NGOs engage with and (re)present divergent knowledges, experiences and perceptions of water issues during interventions and whether they support processes which enable participants of water interventions to do the same?

An understanding of the conceptual divisions of learning (formal, non-formal and informal), maybe helpful to understand the role of learning in different contexts and how learning can be supported. The conceptual divisions which reveal themselves in research and policy discourse, can tentatively be related to the setting in which a learning experience occurs. While water education and water resource management can be an integral part of formal learning in institutions such as schools or colleges, it may be helpful here to consider the learning that occurs in people's everyday lives. This argument has been made by Scott and Gough (2003), who observe a tendency to conceptualise teaching and learning in terms of planned inputs and outputs (also see Rickinson, 2006 and Smyth, 2006). Learning in non-formal and informal contexts is argued to hold value for understanding wider learning experiences (Dillon, 2003). Within the non-formal context, individuals are argued to both initiate and contribute to the learning process, supporting a repositioning of the learner in the traditional positioning of expert and novice. Rather, those who are involved in mediating learning are required to have a greater understanding of learners' life worlds, their experiences, interests, existing knowledge and understandings, so that they can position themselves to assist the learning process, and when required, to take a more instructional role. Informal learning contexts are argued to involve a lesser degree of organisation, taking the form of information and non-informational materials.

Formal settings and associative theories of learning are typically identified with one another (Dillon *et al.*, 2005). Also known as behaviour-focused models, learning is depicted as a linear process whereby knowledge and skills accumulate over time. However, situative theories and constructivist perspectives on learning, as an individual process of meaning-making through experience, have informed educational

interventions in informal and non-formal settings. Learning can also be implicated at collective levels according to situative models, the motivation for which is bound up with community membership and identity (e.g. Lave and Wenger, 1991). However, this does not necessarily exclude the assumptions underlying behaviour-focused models, which can be implicit in interventions in non-formal contexts where pro-environmental attitudes or behaviour are sought. Educational activities in all these settings may only have narrow objectives to raise awareness and target specific groups. This is evident in the case study examples in Conservation International's Freshwater Strategy. Local knowledge is discussed in terms of its utility in conservation issues and the work of Conservation International. When discussing the degradation of freshwater ecosystems, rivers are described as a constant part of collective heritage, concurrently appealing to romantic ideals of communities living in close relation to collective water resources:

'What makes a river so restful to people is that it doesn't have any doubt, it is sure to get where it is going, and it doesn't want to go anywhere else.'  
(Conservation International, 2010: 17)

Conservation International represent nature as biodiversity, and the landscape as a product of dynamic ecological and physical processes and systems, which shape the wellbeing of local people. As a consequence, Conservation International focuses on the functionality of natural systems and resources as well as natural resource management. For example, the Namaqualand Wilderness Corridor in South Africa focused on the farming and pastoralist sectors of the community to increase understanding of wetland conservation. Conservation International identified these groups as both contributors to wetland degradation and potential stewards of these areas. Wetland areas have been restored by local farmer groups, and farming and grazing practices adapted, as part of the programme. There is no explicit reference to specific strategies or learning outcomes although they mentions its work to improve water management through small-scale technologies, which implies that an understanding of conservation principles was promoted. Incentives for local enterprises which support conservation were also encouraged.

In another case study, the WWF identify the agricultural sector as the highest water user in most African countries. In a case study in Lake Chad, bordering Niger, Nigeria, Chad and Cameroon, the drivers of water shortages are discussed as a combination of population growth and the over-extraction of water for irrigation in already water stressed areas (semi-arid areas with low precipitation). Integrated Water Resource Management (part of international policy), is favoured as a strategy for sustainable economic development. Water scarcity in this case, has become an issue related to the physical aspects of supply. Movik and Mehta (2009) argue that when framed in this way, it justifies institutional frameworks and hierarchical structures of management and power. This does not mean that strategies to build social capacity for effective local participation in these institutions were not part of this process but these were not

explicit in the literature that was reviewed. With the dominant discourse of people-oriented strategies in international policy, these case studies from international conservation organisations who have developed freshwater strategies, raise questions for the research pertaining to the processes through which local needs are identified, how relevant audiences, partnerships and settings are considered and the choice of technology and strategies that are planned for interventions.

Fien *et al.*, (2001) conclude that interventions which solely aim to facilitate specific technical skills and solutions, signal missed opportunities for greater social capacity building, where other social strategies may have been more appropriate. Furthermore, not all groups will have the same level of access to water resources or in deciding the direction of the changes to their own livelihoods and lifestyle, which were deemed unsustainable by the conservation organisation.

The role of learning in supporting individual and group agency through collaboration and capacity building, is central to a range of recent research. It is evident in developments in resilience theory, (e.g. Tidball and Krasny, 2014; Sinclair *et al.*, 2013; Jabeen *et al.*, 2010); transition theory (Jerneck and Olsson, 2008); social learning theory (Lotz-Sisitka, 2012; Armitage *et al.*, 2008) and Education for Sustainable Development (Sterling, 2014). Although some of these examples are still problem-orientated and focus on adaptive capacity as short-term adjustments, they mark a significant move away from prescriptive and purely instructive approaches to promote multi-stakeholder involvement. Capacity building through learning is argued to be essential so that people that are marginalised in particular, have sufficient ownership and agency to act and to manage change and uncertainty (e.g. Cundill and Rodela, 2012). For Lotz-Sisitka *et al.*, (2015: 77) socially critical education theories that describe 'transformative and transgressive forms of learning' can enable 'new forms of agency to emerge' through a democratic process that recognises the 'value and validity' of all views. According to this perspective, learning itself can be understood 'as an individual positive freedom' (Lotz-Sisitka *et al.*, 2015: 76), which can address the power relationship between development organisations who shape water policies and water users who are guided by this external knowledge (also see Loftus, 2015).

The case studies from the WWF and Conservation International represent governance interventions, typified by processes to regulate use, primarily for production. The Applied Research Institute -Jerusalem (2008) and a Community-Led Total Sanitation programme (Greaves, 2010), provide examples of micro-level interventions which claim to make context dependent technological choices to meet local needs through greater collaborative efforts.

A local Palestinian NGO, The Applied Research Institute - Jerusalem (2008), link sustainability and poverty reduction with social justice suggesting the need for a socio-political approach to water issues. They discuss the disparities between Israelis and Palestinian access to water. The Applied Research Institute - Jerusalem purport to

support local innovation and knowledge, through research and training around appropriate technology in the West Bank. This includes small-scale rainwater harvesting and wastewater use, for addressing food security. The programmes occur in informal and non-formal settings, through workshops, meetings and information campaigns (e.g. water quality, sanitation and hygiene). Training programmes also look at developing recipients knowledge of cropping techniques and land management.

The Community-Led Total Sanitation programme similarly describes the facilitation of participatory learning approaches through knowledge sharing and training networks (Greaves, 2010). Community-Led Total Sanitation encourages community members to decide how to address sanitation issues and to use their own resources and knowledge to create sanitation systems that meet their needs. All of the water interventions including community mobilisation programmes, can involve partnerships with government agencies or NGOs. However, with multiple and often conflicting understandings of water issues and the multifaceted meanings that people give to water, it raises questions concerning; how interventions take account of multiple perspectives in understanding water issues, in order to engage all interest groups; how NGOs approach multiple understandings and representations at the local level and who should learn what, from whom and how?

## **2.7 Concluding thoughts**

If learning is to involve all stakeholders and engage with the experiences and place-based understandings of more marginalised groups, then a learning approach to NGO-led community-based water interventions can provide opportunities for joint inquiry, the exchange of knowledge and capacity building. Such a learning process is argued to strengthen local ownership and agency so that people can respond to and manage uncertainty and change (Sterling, 2014). Sterling (2014: 90) argues that education and learning should not be isolated instruments of change but can 'enhance the effectiveness' of other strategies (such as campaigns or financial disincentives), 'through developing informed engagement, agency and empowerment among all affected stakeholders. Further, education can build lasting change - that is, sustainable change, because it is owned by the learner and reaches hearts and minds'. Sterling (2014) is arguing that learning is essential for sustainable development, without which change itself will not be sustainable. In the same way, this argument raises questions about the role of learning in the delivery of sustainable water provision and use. Does learning need to be a component of water interventions for there to be sustainable improvements in access to water for marginalised people and local ownership of change in water resource management? The role of learning in strengthening local ownership and sustainability will be examined further in Chapter 6.

The development of both the typology of water interventions and the meaning-based framework through the literature review, has enriched my understanding of the research question:

*How can learning that results from NGO-led community-based water interventions be mediated by local level understandings, particularly those that relate to sense of place.*

It has enabled a more sophisticated account of, in particular, the interconnections between place and water; learning and sustainability and the implications for water interventions.

The research question has facilitated exploration of why place-based meanings are important in relation to how water is understood and used, and the potential role that learning might take in community-based water interventions where learning strategies connect different ways of knowing and practice with local knowledge and people's day to day experiences of water shortages. The literature review leads me towards a particular methodology that is now described in Chapter 3.0. This methodology enables people to give their account of local water practices and lived experiences of water shortages, and provides data that builds up a picture of the local context and the dominant models of water interventions in this context, as well as the way in which NGOs and other actors understand water issues in the OPT.

## Chapter 3: Methodology of Research

### 3.0 Beginning with the 'isms' and 'ologies'

The question of how to begin thinking about the research methodology, arose for me while reflecting on the plethora of 'isms' and 'ologies' used to understand the world in social science research. The existence of this array of 'isms' and 'ologies', illustrates that research is a matter of methodology rather than just method (Rose, 2003). The relationship between methodology and method is complex and what is notable in the literature, is the absence of any consistent conceptual distinction between them. What does emerge however, is a logical process whereby the researcher assumes an ontological position and an epistemological position(s), which in turn, shape assumptions about methodologies and methods. These considerations are thought to intersect due to the interrelationships between them (Browne and Nash, 2010). Before explaining the ontological, epistemological, and subsequent methodological choices of this research, I will outline what I have come to understand by the various available 'ologies' and why methodology matters.

Researchers are confronted with considerations about the nature of reality (ontology), the nature of knowledge (epistemology) and how knowledge is developed (methodology). Methodological considerations are argued to arise from epistemological assumptions which in turn arise from ontological assumptions. Ontology is concerned with whether there is an external and absolute reality, and if so, how it relates to internally experienced and socially constructed meanings. Together, ontology, epistemology and methodology inform our understanding of the world as well as the significance of this understanding for research (e.g. validating theory or emancipation), (Cohen *et al.*, 2007). According to Gough (2002), all knowledge is produced within certain epistemologies, which pertain to different interests and ideas about what knowledge claims are possible. For example, interests may range from discovering the world as it really is, based on an understanding of knowledge as universal and objective, to understanding the significance of meaning (interpretivism); to problem solving and transformation (associated with critical theory and action research) (Scott and Usher, 1999). The methodology then connects the epistemological and ontological considerations to the methods and to carrying out the research.

I take the view expressed by Rose (2003) and others (e.g. Dillon and Wals, 2006; Gough, 2002), that researchers should begin conversations about their positioning and assumptions from the outset, as underlying social theory determines what is possible from the research. Theoretical and philosophical assumptions influence not only how data are collected, but what questions are considered important, the relationship between the researcher and others involved in the research process and what data are deemed relevant. This view highlighted for me the significance of theory throughout



the research process. Rose (2003: 3) describes social theories as sets of resources to be worked with and alongside research processes, such as reflections on the assumptions that we make as researchers about the social world, our intentions and the relationship to practice.

Researchers engage with theoretical and philosophical assumptions from the beginning of the research process, when thinking about a research question and how it can be answered, to actually doing research in a specific context. Due to the implications of theoretical assumptions for doing research, a pervasive debate about legitimacy has ensued. As a result, quantitative research has been positioned against qualitative research and immersion against objectivity in relation to the fieldwork. For example, critical theorists, among others, challenge the claim that knowledge can accurately represent reality, arguing that all knowledge is embedded in culture and history. Accordingly, research can only re-present it (Scott and Usher, 1999). If this is accepted, the researcher cannot be an objective observer but must engage with others in an iterative and dialogical process. However, how engagement occurs and how researchers respond to power relations, is often left to researchers themselves to clarify.

In working through the concerns and critiques of methodologies, social science research is reconceptualising the boundaries between different theoretical positions, how data is collected and questions of quality. For example, Greene and Caracelli (2003) discuss dialectic mixed methods inquiry, which responds to specific contexts with multiple methodologies and purposes. I will now turn to my own personal research journey, to discuss the influence that my engagement with these writings and conversations about methodology has had, in addition to the influence of my own moral and intellectual concerns.

### **3.1 Beginning my personal research journey**

My research narrative began before any first attempts toward the research question. It was an outcome of pre-existing concerns about the experiences of people in the OPT who lack access to safe, adequate water, after visiting the West Bank in 2010. I had also previously conducted research that examined educational activities in an NGO-led conservation education programme in Uganda. It was during this time that I questioned the role of NGOs in education and promoting social change, and the participation of local people in this process. Underlying these issues, were assumptions about the dominance of global discourses that privilege universal knowledge and prescriptive models of community-based conservation and development interventions. My thinking was also informed by a desire to understand how people perceive and experience water issues, what water means to them in their own lives and whether these understandings could provide insights for broader collaborative learning processes in water interventions.



Reading widely around water, natural resource management, alternative development theory and sense of place, I found new ways to consider the diverse and interrelated issues that were presenting themselves in the literature. Through the process of reading and reflecting on the existing literature, I gained new understandings of the issues and questioned my assumptions- a process referred to by Allen (2003:15), as reflection, revision and iteration. This process of reflection was prompted by my interest in socially critical education theory as well as concerns about transferring the categories of sense of place that I understood, into another context.

This research is influenced by theories which challenge globally endorsed narratives of water scarcity that neglect issues of equity and sustainability (notably Mehta *et al.*, 2007 and Shiva, 2002). The meaning-based and people-centred frameworks discussed in the literature review, bring material, relational and symbolic aspects of water together. They are guided by a distinct ideology- an ideology appropriate for the lived experience of the researched. For example, White and Jha (2014), discuss the development of an adaptable framework that could be applied in particular contexts of their research to measure different dimensions of wellbeing. The framework was developed from theoretical work and previous exploratory work by the Wellbeing in Developing Countries Research Group (<[www.welldev.org.uk](http://www.welldev.org.uk)>). In order to test the model of wellbeing that resulted, the researchers started with local understandings of wellbeing at the research sites, which informed the framework and its subsequent development (White and Jha, 2014). This research recognises the importance of local expression and the need for reflection and adaptation during fieldwork and analysis. Within the context of the OPT, both my conceptual and methodological framework had to respect and respond to the perspectives, knowledge and values of people at the local level who are experiencing marginalisation.

This research seeks to understand how people interpret their own situation and their experiences of water issues through individual accounts as well as how NGOs and other stakeholders engage with and (re)present these. Interpretivism broadly provides coherence with this approach and with the purpose of my research, to better achieve co-learning. According to interpretivism, individuals interpret, reproduce and negotiate meaning in their everyday lives and have the ability to represent their experiences (Cohen *et al.*, 2007). The prioritisation of understandings and meanings at the local level, suggests that the knowledge of others needs to be privileged over the knowledge of the researcher. Knowledge production is understood as a process of co-construction between the researcher and others engaged in the research process. My ontological position is discussed in section 3.2.

I was interested in Palestinians' own accounts of their lives. Their stories are important, not just because it gives them a voice or is even beneficial for them, but because the stories are theirs and this makes a difference to all of us. In the words of Manzo (2005: 84), 'in the end, by exploring people's stories about place, we can learn a great deal about ourselves'. The work of Edward Said is very influential here, not only

in showing the importance of historical and cultural sensitivity but in supporting the position of interpretivism that meanings matter. However, Said (1995) dismisses the idea that Western narratives can understand and represent other people's own history and culture, arguing that they present an idea of one historical world, which dissociates people from their own history and identities, (a process which he calls historicism):

'... historicism ... has expanded and developed enough to include antithetical attitudes such as ideologies of Western imperialism and critiques of modern imperialism, on the one hand, and, on the other, the actual practice of imperialism by which the accumulation of territories and population, the control of economies, and the incorporation and homogenization of histories are maintained'. (Said, 1995: 101)

Edward Said's thesis on Orientalism, also highlights the need for a critical form of interpretivism, to enable me to place my perceptions under critical control. I had questioned how adequate an interpretive inquiry could be at privileging the accounts of people who are experiencing marginalisation, as interpretivism has been criticised for its neglect of power and structural forces (Cohen *et al.*, 2007). Therefore, this research recognises social difference and the ability of certain groups to impose their own meanings upon others. There is also a need for critical analysis with a clear distinction between etic and emic interpretations. An etic approach tests existing theories and conceptual frameworks in different contexts, whereas emic interpretations start with the accounts of the research participants' experiences and their perspectives (see Wood, 2007: 116). Rose (1997: 306) maintains, reflexivity is 'a strategy for situating knowledges: that is, as a means to avoiding the false neutrality and universality of so much academic knowledge'. My research therefore, connects local accounts and ideas of self within these, to the specific context, and the history of people who live within the region.

In the context of water and the human-environment relationship, this research explores multiple and potentially conflicting knowledge claims. From the literature review, it is understood that people interpret their situation and negotiate meanings according to multiple social identities as well as in response to societal and environmental uncertainties. Individuals will therefore respond differently to similar water issues and this tells us something about the context, (and its ability to constrain or enable decision making and action). People use the meanings they attach to particular social and natural entities, to engage with their environment, and these meanings are revealed through their actions and relationships. Meanings relate in important ways to other ideas, such as whether water is present, safe or owned by someone and are therefore not just interesting in themselves; they are significant as they have an impact on social life. The idea that interpretation is always mediated by context, will be further developed in the discussion of data analysis.

Reflecting on my personal research journey and how my approach fits in with the conventional boundaries of social theories, I found it helpful to conceptualise social theories as a continuum (see Sarantakos, 1998). I chose to use an interpretive approach but similar to Cohen *et al.*, (2007), I would argue that interpretivism can be and needs to be critical. For example, Riessman, (2003: 21) argues that 'social structures are deeply embedded in each ... narrative', so it is important for the researcher to ask questions while analysing people's experience (for example how does the individual position themselves in their account during the interview?). There is also a critical component because of the focus on the relations between NGOs and people at the local level, which led to a revised understanding of intervention processes, educational strategies and learning. However, given that people will attach different valuations to intervention outcomes, it is questionable whether these revised understandings will constitute better practice in the water domain. Therefore, this research recognises that it is possible and sometimes necessary to engage with different theoretical assumptions during the research process as a way of responding to complexity and multiple understandings and perspectives of water issues. This understanding is captured by Greene and Caracelli (2003) who develop a dialectic stance which considers the value of different ways of seeing the world:

'... dialectic mixed methods inquiry is envisioned as a way of intentionally engaging with multiple sets of assumptions, models, or ways of knowing toward better understanding.' (Greene and Caracelli, 2003: 97)

### **3.2 Methodology and methods**

The research question has two main interests; one relates to people's lived experiences of water issues and how they understand these, while the other is concerned with how NGOs engage with local experiences, perspectives and knowledge of water during water interventions, (how are interventions developed in relation to the experiences and priorities of people at the local level and is there a need for NGOs to reconsider their ideas about learning?).

As discussed, this research adopts an interpretive approach (though aware of its possible limitations), but acknowledges that there is a physical reality (e.g. rivers, ground water and bacteria exist), which people engage with and understand through a continuous process of meaning-making. This theoretical framework has been developed by Gough and Stables (2012), to defend the use of ontological realism in conjunction with epistemological relativism as an approach for environmental education:

'People inhabit an environment which is perceived and understood as a system of signs, in relation to which the brute physical is, in John Deely's term, "prejacent" (cf. Von Uexkull's conception of the *Umwelt*; Deely, 1990). They

may flourish, or they may struggle to survive, but in either case they will interact with their environments, simultaneously modifying both them, as *Umwelt*, and themselves, as sign-users ... It is an engagement with reality. Being "out-of-touch with reality" is, in this sense, simply not possible.' (Gough and Stables, 2012: 371)

An interpretive epistemology and realist ontology predisposed this research to an analysis of people's accounts of their experiences of water issues within the specific context of a Palestinian village and settlement in the West Bank. As this research is concerned with how people make sense of these experiences with the meanings and roles they ascribe to water, it adopted a descriptive approach at particular stages, characteristic of qualitative research (Bryman, 2004). Local narratives provided a starting point for the research to explore interactions between participants and NGOs and the learning processes through which understandings are negotiated and (re)presented.

Qualitative research often claims that the world should be seen 'through the eyes of others' (Bryman, 2004: 277), so that in order to write detailed accounts of a particular social context, the researcher should immerse themselves in the everyday lives of the researched. However, I felt a reluctance to use the term immersion and the boundaries that this suggests between 'insider' and 'outsider', as I questioned whether these labels contribute to understanding the process of trying to find understandings. Massey (2003) suggests that researchers have to consider how to negotiate engagement in the field rather than falsely dichotomising immersion and objectivity, researcher and researched and other research boundaries. Rather, Massey (2003) argues that the field is constructed in relation to the participants (understood as researcher and researched), and is connected to the rest of the research process, rather than existing 'out there', only to be discovered and claimed:

'The field ... begins to seem less like a space which one gives to and subsequently leaves. Rather it is much more complex structure which one transforms, it is still present, in transformed form, in your written report ...' (Massey, 2003: 83)

Drawing on the philosophy of Bruno Latour and the idea that transformations occur during each stage of research, Massey (2003) encourages researchers to consider the relations between things. This requires reflexivity; thinking about taken-for-granted meanings that we use and apply, the resulting power relations and ethical responsibilities.

Much of the research literature that was reviewed around sense of place, employs an interpretive framework and develops theoretical propositions for place from the data (e.g. Davenport and Anderson, 2005; Manzo, 2005; Mueller and Abrams, 2005). Following such interpretive frameworks of sense of place, this research seeks to

understand lived experiences and understandings of water shortages through people's own reflections and representations.

Categories linking sense of place and water were developed in the literature review using the meaning-based framework in Figure 2.0, as a framework for practice and interpreting accounts (e.g. guiding questions and analysing connections at a fundamental level). Such frameworks of sense of place when developed in relation to water, could support learning processes for NGOs and participants, through which knowledge and understandings of water are negotiated and created at the local level. Although I have been explicit about taking this framework forward for these purposes, the typology remained open to engagement through what was envisaged as an iterative process during the fieldwork, so to allow for emergence during the research process in the OPT.

This research recognises the importance of privileging the knowledge of the people who share their lived experiences in the research process, due to the connection between knowledge and autonomy, values and beliefs (Salas, 1994). This point is embodied in a quote by Maria Salas (1994: 66), discussing the power relations between NGOs who promote universal, scientific knowledge in Andean agriculture and indigenous groups at the local level, who are argued to value very different ways of knowing as part of their collective identity and heritage. In particular, Salas has explored the cultural dimension of knowledge, analysing early drawings amongst other methods, which contained symbols relating to Andean knowledge:

'Local knowledge survives as the main form of resistance of Andean culture and society' (Salas, 1994: 66)

### **3.21 Learning from cases: multiple case study research**

The research issues compel context-dependent knowledge, detailed description and the development of theory, as I bring existing ideas about meaning-based frameworks and what processes may be important to this research. This research not only concerns how water issues play out in particular contexts but also the relationship between context, NGOs and interventions. Long and Long (1992) argue that the case study enables researchers to go beyond the mere presentation of claims, to analyse such processes and social forms in a specific context. From this, new ideas and practice are thought to be possible. Lotz-Sisitka and Raven (2004) also refer to this aspect of case studies, describing them as action-based. There has been much debate around how the case study should be defined; as the specific subject of research or as a purposeful research strategy, which provide insights into a particular issue (Yin, 2003). The former approach describes an intrinsic case study, while the latter describes an instrumental case study (Yin, 2003). Although approaches to case studies vary, I consider case studies as defined by Lotz-Sisitka and Raven (2004), as both knowledge

and action; theory and practice and the qualities of this methodology that I felt were useful to this research.

Lotz-Sisitka and Raven's (2004) adoption of a case study methodology, as part of a collaborative evaluation of an education programme in southern Africa, influenced my perception of the case study and its potential for learning, referred to by Stake (2005: 454) as '... the epistemology of the particular'. Stake (2005) describes this as the process of learning from the case(s) through narratives, experiential accounts and interpretation, as well as knowledge of the context within which these arise. In this way, it is understood that case study methodology can engage with complexity through multiple understandings and sources of evidence.

Learning is central to this research; in providing opportunities for people to tell their stories around water, (including their participation in intervention activities); in seeking understandings which could enable reflection and challenge existing ideas about the social processes in water interventions (for both NGOs and participants); in offering insights from the cases for others to interpret in different contexts and finally, in seeking to contribute to knowledge and the development of theory. This research therefore uses the term case study as an inquiry, with the purpose to understand the context and what can be learned here, through understanding peoples' accounts of water, their participation (or non-engagement) in water interventions and relationships with NGOs.

This research uses multiple cases (also known as embedded case study design), not with the intent of comparing cases but in order to better understand the experiences of people within the region and the implications for interventions. The cases include a village and a Bedouin settlement, both of which are situated in the West Bank. These groups and settings are selected as cases, as they are known by NGOs to be experiencing marginalisation and water shortages. This is known as purposive sampling:

'Purposive sampling allows us to chose a case because it illustrates some feature or process in which we are interested'. (Silverman, 2011: 388)

### **3.22 Criticisms of the particular ...**

The case study has been criticised for its rejection of generalisability. Yin (2003) however, asserts a strength of case studies as the use of theoretical propositions to guide the collection of data and analysis. Yin (2003: 32) perceives this role for theory in case study designs, as 'analytic generalization'. This link to theory is also proposed as an alternative route to generalisation by Robinson (1993: 131), when referring to problem-based methodology (PBM):

'... researchers employing PBM or other methodologies which do not typically involve sampling will contribute generalisable knowledge to the extent that they

move beyond the local to seek the potentially universal, by linking their analyses (through challenge or confirmation) to already accepted generalised knowledge claims ...'.

However, generalisations from the particular must depend on the extent to which the specific context has been understood and detailed. It also needs to be recognised that the analysis represents a point in time. Ideas about the problem as well as what is possible, is very likely to shift. Lotz-Sisitka and Raven (2004) question whether generalisation should be the aim of case study educational research at all. They argue that situated knowledge does not abandon theory, as it seeks to understand cases within a broader context and in doing so, can provide insights for others to consider. Therefore the aim of such educational research is instead thought to support reflexive practice so that different perspectives and findings can be both shared and challenged.

### **3.23 Methods: narratives, interpretation and relationships**

Methods can be conceptualised as the techniques for collecting data. These tools are deployed according to what forms of knowledge are pursued and certain ways of knowing (linking it to the methodology). For example, interviews may be used by researchers following both a positivist and interpretive epistemology. Researchers may pursue a structured and standardised form of interview, according to positivist assumptions that interview data can provide access to facts about the world. Whereas interpretivism, understands interview data as a particular representation of reality and instead, focuses on how meanings are actively constructed during interviews which are more open and flexible.

As discussed, this research is interested in accounts of water at the local level and the aspects of water that people emphasise in their descriptions of their lived experiences of water shortages. It is also concerned with how people understand water issues, the practices they adopt and their interactions with NGOs. This approach is based on the assumption that people may act on the basis of multiple and diverse meanings, which are constantly created, maintained and negotiated, and relate to the social context. Therefore I required methods of data collection that enabled me to look at the connections between accounts of lived experiences around water, identity and context. As a result, the case studies used multiple methods that are often associated with ethnography, combining observation and interviews with documentary analysis. This research does not however claim to be an ethnography due to the immersion that some ethnographers claim is necessary in order to understand the lives of others. The research process is instead understood as a process of engagement and interpretation rather than (to paraphrase Rose, 1997: 315), attempting to occupy the same space as the researched:



'... the research is seen as constitutive ... both of the researcher and of the other involved in the research process'. (Rose, 1997: 315)

### 3.24 Interviews

In the context of this research in the OPT, I felt it was important to balance my specific interests with the people who engaged with the research. I therefore considered the use of interviews as an opportunity to invite and encourage people to tell their stories around water, with the assistance of an interpreter. The interviews then became an opportunity for the participants to speak about their everyday experiences and what was important to them.

A schedule was produced prior to the fieldwork, as a guide for this process to help me to consider the areas of interest. However, I was primarily concerned with individuals' experiences of water and encouraging them to talk about the issues that are important to them in the context of water shortages. The schedule was therefore only suggestive and followed a semi-structured interview design (Smith and Osborn, 2003). The interview schedule included more open questions at the start of each interview. This enabled the residents of the village and settlement to give their accounts of place and water, while helping to minimise the effect of my own presence on their responses to the questions.

The interviews focused on storied accounts of water, as I was interested in the particularities of each individual who engaged with me. As an interpretive inquiry, the process is understood as a co-construction, during which past events and experiences are reconstructed and constructed, by all participants (I include myself in this) (Scott and Usher, 1999). My role as a participant of this process, was to re-present the narratives that were presented to me, through negotiations with the individuals. In order to understand these representations, the research examined the context in which people made sense of their experiences and which, set the agenda for particular accounts:

'The biographer or educational researcher is engaged in a process of reconstructing the life from fragments of the data collected in the course of extended interviews. This involves a number of processes: gaining access to the material (choosing and negotiating with the person about the public presentation of their autobiographical text), collecting the data ... interpreting those data and constructing the account, reflexively surfacing their traces within it, and agreeing on the way it is to be inscribed'. (Scott and Usher, 1999: 118)

Interviews with representatives of a case study NGO were planned to follow observations of intervention activities, so to encourage their reflection on particular issues and the processes that were observed. I am particularly interested in NGOs'



'social relations of inquiry', a term coined by Robinson (1993: 23) to describe approaches to developing shared understandings of problems and how to solve them. Triangulation, with the analysis of organisational documents, observations and interviews with NGOs, attempt to account for any prefabricated or standardised answers, for example regarding practice, participation and organisational goals.

### **3.25 Observational research**

'... in a sense, all social research is a form of observation, because we cannot study the social world without being part of it'. (Silverman, 2011: 117)

Observation is argued by many social scientists to be fundamental to the research process (e.g. Angrosino, 2005). However, whether it is thought possible to become a 'complete observer' of participants' practices and to gain a direct experience of these activities, will depend on the epistemological assumptions that shape both the purpose of participant observation and the method (Scott and Usher, 1999). Angrosino (2005), discusses how some researchers are prefiguring observation-based research by placing principles of social justice at the centre of social research. This is encouraging new ways of understanding observational research, as 'interpersonal interaction' (Angrosino, 2005: 734), which relinquishes control (traditionally associated with objectivity and replicability), in favour of collaboration, and dialogical processes:

'... what values may we invoke to explain and justify the ways in which we seek to use our ethnographic knowledge?' (Angrosino, 2005: 734)

This research understands the value of observation, in providing an account of people's lived experiences around water through their actions and the relationships they form. People's actions and relationships are held to reflect the meanings people give to the world (Long and Long, 1992). These accounts are narratives about how social identities, social forms and processes are actively created, maintained and negotiated. This enabled me to ask questions based on what Long and Long (1992) refer to as, 'an intersubjective relation' with the individual and not solely from the meaning-based framework that has emerged from sense of place theory:

'... 'experience' underlies all understandings of social life' (Maanen, 1988: 3)

This research required me to be flexible in my role during the fieldwork, in response to both opportunities and challenges that arose to engage with local people and representatives from NGOs. With this, I employed a range of tools to record my observations. These included a field diary, artefacts, such as copies of NGO resources, photographs and voice recordings. The field diary provided a space for me to record an account of the research and the process of becoming, with all its contradictions, challenges and possibilities.

### 3.3 Responsibilities

'Attention to the representations we make, to the possibility that messages may further disenfranchise or oppress ... when they begin circulating in the wider world, and respect for the wisdom of people ... who know all too well the unfortunate images that surround their life, may be the start of our performance of justice. It is a place to begin'. (Lincoln and Denzin, 2005: 1124)

Some social scientists in the interpretive community have been challenging the criteria with which the quality of qualitative research is traditionally assessed by, (namely validity, reliability and replicability) focusing instead, on the power relations and ethical concerns that inform data collection when documenting the lives of marginalised people. This view challenges the idea that the researcher can be objective, rather accepting the bias of researchers and the need to make our values known and to share perspectives (e.g. Lotz-Sisitka and Raven, 2004).

As this research recognises the need to privilege the knowledge of all participants, Lincoln and Denzin (2005: 1118) would argue, that as a researcher, I have an 'interpersonal responsibility', or a responsibility to participants, to reconnect the research to issues identified by the participants themselves. As contradictions between accounts and interests arise, there is a need to consider these contradictions as well as alternative interpretations. This process involves the people who participate in the research, the research practices and relationships, which in part, also create the study. Before expanding on these ideas further, I will discuss some of the different perspectives surrounding the quality of qualitative research.

If it is accepted that qualitative research is distinctive, then it is argued by some social scientists, that the criterion by which we assess it, should reflect the nature of qualitative research itself. Quality was traditionally associated with reliability (i.e. are the results consistent?), replicability (is the study capable of replication by another researcher?), internal validity (is the observed causal relationship valid?), and external validity (can the results be generalised beyond the specific research context?). As many of these criteria are concerned with achieving objectivity (as a positivist preoccupation with minimising the impact of the researcher), Bryman (2004) and others (e.g. Lincoln and Denzin 2005), suggest alternatives for assessing the quality of qualitative research. Alternative concepts of credibility, transferability, dependability and confirmability, are discussed by both Silverman (2011) and Bryman (2004) as potential criteria. However, these alternative criteria appear to make the same fundamental assumptions that research should be replicable and objective. Transferability seems to assume the same principle of external validity, being concerned with the degree to which findings can be applied to other contexts, while confirmability, like reliability is concerned with minimising errors and bias. Like the concept of reliability, confirmability also considers the impact of the researcher on the setting.

This research takes the position that as a researcher, I hold values and frames-of-understandings that I enact. Following the view that all researchers are situated, I would not expect the data and conclusions from the study to be replicated. Rather, reflexivity is deemed important to inform the quality of data collection. For example, reflexivity on the practices of representation, power relations, relationships and personal experiences. Following Sarah Whatmore's (2003: 67) conceptualisation of 'fieldwork as engagement', the principles of 'interpersonal responsibility' (Lincoln and Denzin, 2005: 1118) and with this, the notions of trust and authenticity become important. Participants were given the opportunity to speak about what's important to them around water and subsequently I planned to re-present these accounts to them. This is an important source of feedback and a further way to clarify meaning around observation-based interpretations. This is a form of triangulation, when multiple methods are used to gain different sources of data around the same event, with the purpose of corroborating the issues (Yin, 2003). Lincoln and Denzin (2005) support the use of triangulation in identifying multiple and often conflicting realities. A similar approach is employed in this research when examining NGO practices, using interviews, observation and the analysis of documents. Documents were analysed prior to the fieldwork, as a way of attempting to understand how the organisation communicates its objectives. Documentary analysis also helped in formulating the interview questions about organisational processes.

The conclusions from my research are open to others to determine whether they can provide insights for practice in other contexts. It is therefore necessary that my position, values, choice of theory, methods and analysis are explicit. Silverman (2011) offers criteria to guide this approach and ensure credibility, reproduced in Table 3.0. These incorporate ideas about representation, requiring researchers to position the data in the local context, justify research methods and to ground claims in a critical analysis of the data.

There was a responsibility to the people who were involved in this research as I entered into a relationship with them (Massey, 2003). As the local residents are experiencing marginalisation, I felt there was an ethical responsibility to act in ways that would benefit them. This included an obligation to report accurately, as far as possible, the interpretations they themselves bring to their world.

It was important that people participated voluntarily in the research and could make an informed decision about whether to participate. This is embodied in the idea of informed consent and was gained from consultations with participants, with the assistance of an interpreter (Israel and Hay, 2006). Not all of the residents who were approached, wanted to participate or saw any benefit in doing so. All of the participants were made aware of the aims and procedure of the research, (including what participation involved and how the data would be used), as well as their right to withdraw at any time. It was also explained that all information would be confidential and that anonymity would be ensured.

**Table 3.0**

Criteria for designing and evaluating qualitative research
<ul style="list-style-type: none"> <li>• Situate the research in appropriate literature; that is, the study should be built upon existing knowledge</li> <li>• Clearly articulate the connection between theory and data</li> <li>• Describe and explain case selection: why particular sites, participants, events, or cases are chosen</li> <li>• Pay attention to alternative explanations and negative cases</li> <li>• Operationalize constructs and describe expected findings</li> <li>• Provide clear and detailed descriptions of both data collection and anticipated data analysis techniques: specify what counts as data, how the researcher will go about obtaining data and analyzing it</li> <li>• Describe the intellectual, social, and political significance of the research</li> <li>• Discuss generalizability or significance beyond the specific cases selected</li> <li>• Specify the limitations of the research and anticipate potential reviewer objections</li> </ul>

(Source: Silverman, 2011: 356)

Researchers often use signed consent forms, but these were problematic in the context of this research where participants potentially needed protection (as they live in an occupied area under military rule). A number of alternative approaches were considered, including asking participants to provide a mark on a consent form (Wiles, 2013). However, verbal consent was gained with the assistance of the interpreter. I was acutely aware of the risks that could have been involved for participants in the research process. Therefore, following the recommendations made by Wiles (2013), I rehearsed an introduction to potential participants with the interpreter, and made the participants aware that they could decline to answer any particular questions and withdraw from the interview, should the issues being discussed become too distressing, (as some people have experienced a history of land dispossession, harassment and imprisonment). Opportunities were also given for research participants to ask questions about the research and researcher. The research follows the ethical guidelines for educational research, from the British Educational Research Association.

### 3.4 Data analysis

As the intention of the research was to give focus to Palestinians' own accounts and the meanings that are used locally to understand water in connection to their lives, the sense of place typology was used as an analytical framework. Local accounts are understood to reveal the claims people make about self and others, past and present experiences and imagined futures. Therefore, detailed interview transcripts and the

field diary were analysed to understand the context and the interviewees responses to the researcher.

After having transcribed the data, the transcripts were analysed according to the narratives of identity; the symbolic; relationships; activity and place dependence; heritage; nature; knowledge and uncertainty. These etic categories that emerged from the literature were applied to the case study communities to test their reliability. The analysis involved repeated readings of the data. The data that related to these thematic areas and any patterns of meaning were then identified and recorded.

The thematic areas were continually reviewed during the analysis to ensure that they captured the dimensions of the data. Furthermore, the research distinguishes meanings that local people identify for themselves that are not represented in the sense of place framework. In this way, the analysis was data driven and new themes were identified and incorporated into the framework. I compared cases within the same category of meaning and explored the interrelationships between the multiple dimensions of water, in order to deepen my understanding of these place-based meanings. This involved data reduction so that the data could be organised in a way that enabled me to draw conclusions from it. Examples of this process are provided in the Appendices, with a data analysis table (Appendix 1) and a document that collates and organises the data from a participant's interview according to the thematic areas, to illustrate the coding that was employed (Appendix 2). The table in Appendix 1 provided a way to link the data from the different interviews under the same category of sense of place and to explore the patterns in the data. In addition to applying these categories of meaning from sense of place theory to the data, the analysis also involved generalising from the data to the abstract.

### **3.4I Documentary analysis**

Texts were also analysed using the meaning-based framework. Documents are understood in the literature to be produced with an audience in mind (Punch and Oancea, 2014), and therefore represent something about the context, the problem-definition, values and interests of the case study NGO. Following an interpretive approach, documents were approached as representations and along with interviews and observation, the effect of these narratives were explored. For example, how do dominant narratives within the organisation frame water issues and how does this influence the interactions that emerge during community-based water interventions? How are participation and learning strategies understood in relation to the goals of community-based water interventions?

Instances of divergence from the text in NGO and local people's accounts of practice and through observations were also examined. This follows arguments such as that made by Thompson *et al.*, (2007: 2) who describe the significance of 'contradictory

certainties' in relation to a groups' production and reproduction of shared understandings of the problem that form the basis of its decision-making. These problem-definitions support an organisations work but are likely to be challenged in the process of engagement with other groups during water interventions:

'The problem, we conclude, is that there is not a problem but a multiplicity of contending and contradictory problem definitions each of which takes its shape from the particular social and cultural context that it helps to sustain ... ' Thompson *et al.*, (2007: 5)

A list of the documents that were analysed is included in the Appendices (Appendix 3).

### **3.5 Data collection**

#### **3.5I Introduction**

This section approaches the data collection in relation to the methodology through an experiential account. In this way, this section juxtaposes the fieldwork and research design in order to reflect on the process, the divergences and their implications. My experience of fieldwork has persuaded me to think differently about the process and the significance of the methodology and the research question in shaping what the research can do, not just theoretically but practically and locally.

There was an iterative development of the methodology during the research in response to engagement with communities and NGOs in a difficult setting and the process of reflection that accompanied this. The process of reflection and iteration involved engaging with: power relations; questions concerning how appropriate the research methods were and whose knowledge was being excluded; issues concerning restrictions to access; and, the unpredictability of the fieldwork programme in the research setting. The following sections describe the iterative development of the methodology in response to the field and the data collection that ensued.

I stayed in the West Bank from August 2013 to the beginning of October 2013. During this time, I lived with a family in a village, close to Ramallah and the central office of the case study NGO that works in the water and sanitation sector. My daily journey took me from the peace of the village, through an expanding refugee camp on the steep slopes of the surrounding hills, close to the side of an Israeli settlement and into the bustling city. On some occasions I witnessed mass mourning and protests and on one return journey, I was caught in crossfire, with bursts of shooting as the Israeli army appeared to begin an assault on residents of the refugee camp. My fieldwork involved long bus journeys to both Northern and Southern areas of the West Bank, where I worked at the NGO offices for each of these regions. An arrangement was made with

the case study NGO to accompany them on their field visits to villages in northern and southern regions of the West Bank. I would contribute to editing work and communications during my stay as well as collaborating on the findings of this research.

The case study NGO has three regional offices in the West Bank that implement a range of community-based activities in relation to water, sanitation and hygiene (WASH) and which are described in Table 3.1. The organisation also operates in Gaza. The NGO was established to help monitor water resources and WASH provision in the OPT and to help to protect and develop water resources for the most marginalised communities, particularly in rural areas. Water resource development and rehabilitation in rural areas remains a core activity of the NGO (Document 3).

The objectives of the NGO have evolved as it has established a growing number of national and international partnerships and with changes in global development discourse. It is a member of a number of national and regional networks for WASH. While the original monitoring programme of WASH continues, the case study NGO has broadened its agenda to include capacity building for better water governance in the OPT. This encompasses joint-working for the development of water resources and infrastructure and training programmes for the water and sanitation sector. The organisation revisited its policy on equitable water provision in the late 1990s in response to heightened gender awareness. As a result, 'gender mainstreaming' (a term employed by the NGO), was incorporated into its objectives and women have since been identified as key stakeholders in sustainable and equitable water resource management in the OPT. The case study NGO is also involved in advocacy at local, national and international levels, focusing on human rights-based arguments for the equitable allocation of water resources in the OPT.

As previously mentioned, this research is also concerned with the relationship between the context, NGOs and intervention processes. In such a volatile setting with restrictions to access (see section 3.54), I contacted other NGOs following purposive sampling, for further information in relation to their assessment of WASH in the OPT and their experiences of working with local communities and / or in water policy. These interviews also provided me with the opportunity to share my understandings of NGO and donor activity in WASH in the West Bank and to invite their reflections on some of the issues that I had observed. I conducted interviews with representatives from two Palestinian NGOs (Representatives E and F) and two International NGOs (Representatives G and H), shown in Figure 3.0. I subsequently gained a deeper knowledge of the context within which water interventions occur. Access to these participants was gained through existing informants and were known for their work in WASH in the OPT and specifically the West Bank. For a detailed list of all the informants in this research, please see Figure 3.0.

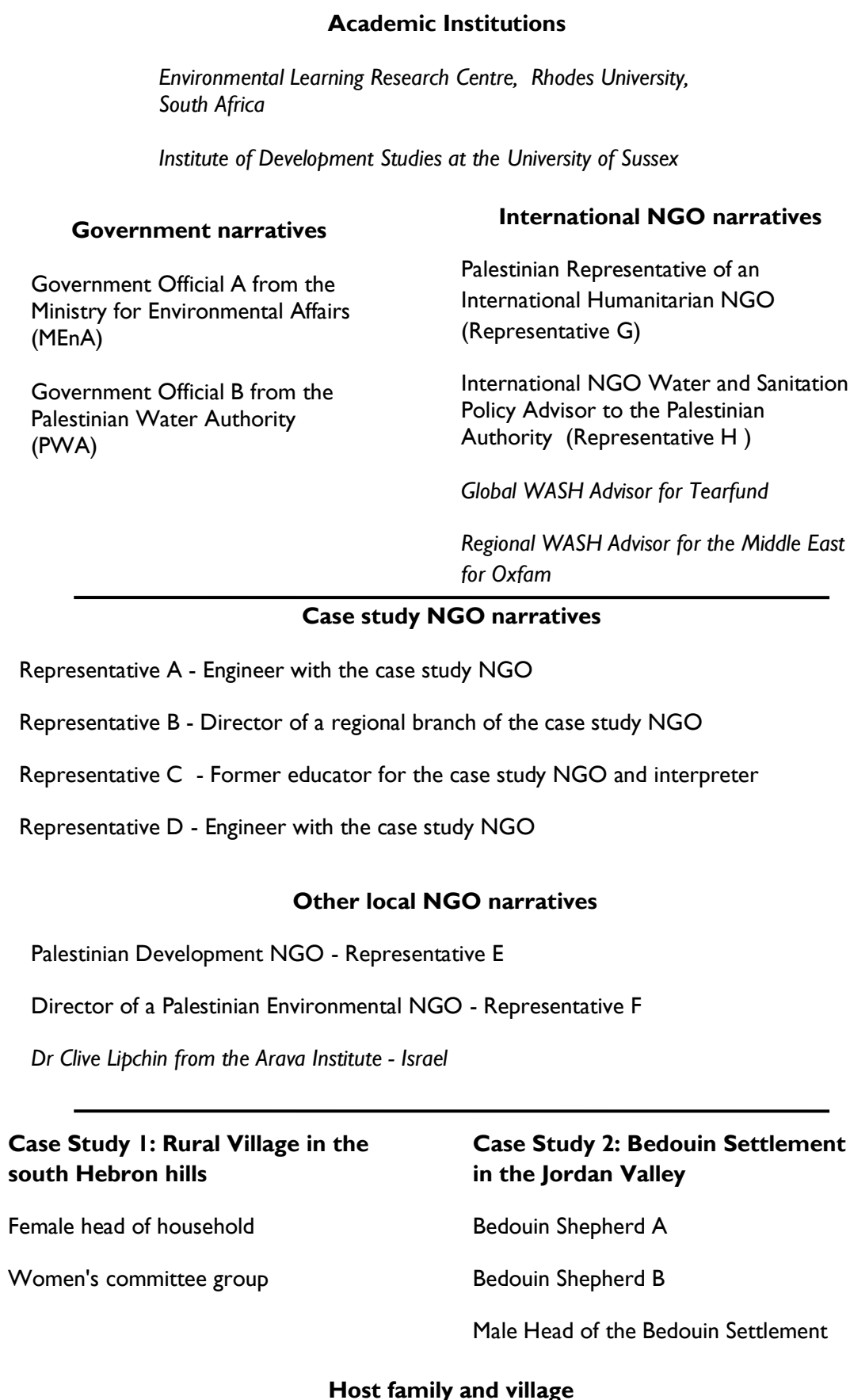


Table 3.1 Activities of the case study NGO at the local level

Activity	Description
<i>Water resource development and rehabilitation</i>	The activities primarily focus on the rehabilitation of existing water technologies, including cisterns and wells. As is often the case in this context, the outcomes can take precedence over the process, and participation can be limited to the construction and maintenance of these water sources. Representatives from the village council and Community-Based Organisations are selected to support project implementation. The NGO also delivers water tankers in emergency situations and provides plastic water tanks for water storage.
<i>Agriculture and Irrigation</i>	The activities concern the development of village-level institutions, (usually user groups such as farmer committees) for managing the construction and maintenance of a water source such as an agricultural pool or a pump irrigation systems, as well as access and use of water from this source. These are often linked to or involve the village council. Training is also provided on irrigation techniques and crops.
<i>Water conservation</i>	A number of techniques are employed to slow rainwater runoff and to capture rainwater. In areas where irrigation is employed, training programmes focus on improving conveyance systems to reduce losses through seepage and evaporation and improving the on-farm application of water and water management practices. Many programmes target women in relation to home gardens and water conservation in the household, e.g. water used in food processing.
<i>Hygiene education</i>	The NGO selects the target hygiene behaviours that awareness and education programmes address at the community level. Women are targeted as part of the NGOs Gender Strategy. The awareness campaigns include the use of water for hygiene purposes such as bathing and household cleanliness; the disposal of wastewater; the use of different water sources and how to maintain them; and the risks of contamination from nearby latrines, cattle or wastewater drainage. Training on water treatment is also provided for local people in villages where water quality is an issue.
<i>Wastewater treatment and reuse</i>	Training is provided to communities on the implementation of small-scale wastewater treatment technologies and the safe reuse of this water. Again women are often targeted to increase the use of grey water in home gardens.



Figure 3.0 Sampling framework



### **3.52 Reflections on reflexivity**

I was told on many occasions to learn the language and ways of the Palestinian people and to listen. I have learnt something about them and the landscape as a 'way of being' and I have learnt more about myself, 'doing research' and its consequences. As a researcher entering a new place, I had anticipated struggles concerning representation and in negotiating a place for my research but not the strength of the ethical dilemma that I experienced relating to the value of my research to the communities themselves and my role as a researcher in responding to the situations I witnessed.

While it is not the intent of the research to prioritise the personal, it does recognise that the development of theory and methodology, the collection of data and writing up, are all part of a reflexive process (Hammersley and Atkinson, 2007). All analysis involves framing in terms of the issues that are prioritised and the utilisation of certain knowledge and methods. I have sought to demonstrate my understanding of the importance of sense of place theory and the claims that it makes through a comparative discussion of the literature and have also attempted to make my interests and values explicit. The fieldwork involved self-reflection through engagement, in particular about my role and identity in relation to others, how power was constituted, how appropriate the research methods were and the problems I encountered.

I understand reflexivity as a tool which researchers should employ in order to contextualise knowledges, experiences and claims. In Chapter 4 the research looks to make analytical sense of people's accounts and to represent their lived experiences. This is also considered to be a reflexive process as priorities are assigned to local accounts and analytical themes are developed. The data synthesis attempts to link theoretical and empirical claims and to engage with multiple and diverse meanings and perspectives.

### **3.53 'Fieldwork as engagement'**

Although my research is still the result of an interpretative process, it did not always achieve the dialogic process that would have been most coherent with my methodology. I gained legitimacy as a researcher in some contexts due to my presence with the NGO, (e.g. meeting with government officials) but many of my experiences with village residents were not collaborative. I was unable to negotiate a dialogue about alternatives in water interventions as the agenda for some of the visits was primarily controlled by the NGO. In a few instances, in order to gain access, I was obliged to accompany a female member of staff who conducted needs assessments with the women in the villages. I was given limited time at the end of these surveys, which constrained my ability to explore different experiences and priorities in relation to water and to provide the space for people to express their own accounts of their

lives. In these instances, neither the residents of the village, nor I, were able to occupy a space in which we could negotiate our encounter, including the production of knowledge, identity and the relationship between us. Furthermore, some members of the NGO expressed the belief that a lack of knowledge within communities was a significant part of the problem, in relation to water conservation, water quality and related issues such as hygiene and health. These factors reduced the potential for learning through dialogue and discussion.

***Field diary - 29<sup>th</sup> September 2013***

*After two bus journeys, I enter the office enthusiastically carrying paper and pens and my proposal for the Director for the last series of visits. I talked to the interpreter and two members of the NGO about my ideas for a participatory workshop. I suggest how it could be used to explore how participants could be more involved in assessing the situation and deciding what actions to take, based on their practical knowledge, coping strategies and priorities. My idea is dismissed unanimously on the grounds that the residents of the village and specifically the farmers are 'simple people' and would first need training to even participate in the activities. Instead, I am told that I can join a meeting that the Director and members of the NGO are holding with a group of farmers from one village. They carry on discussing other things and I sit down feeling utterly despondent. I was hoping for a discussion at least but yet again I will be a passive observer!*

Perhaps the frustration of attempting to negotiate engagement in the field is normal in the context of research. Despite my efforts to participate in village life and in NGO activities, there were still barriers that I was unable to overcome. It was only during the field work that I understood the profundity of Keith Basso's (1996: 71) observations during his ethnography of place-making in an Apache Indian Reservation:

‘An unfamiliar landscape, like an unfamiliar language, is always a little daunting ... Although close at hand and tangible in the extreme, each in its own way appears remote and inaccessible, anonymous and indistinct, and somehow, implausibly, a shade less than fully believable’.

As ubiquitous as meaning-making is, the cultural assumptions, belief and knowledges behind the symbolic meanings of water and the metaphors used to express a way of being in a place, are elusive without access to language. Basso (1996: 73) recognises that local people interpret the significance of these on a daily basis and in order to appreciate this, we need ‘... to learn to listen’. Without the guidance and insight of a local translator in the initial stages of the research, the translations by staff from the case study NGO were partial. My progress with the language was slow, despite ad hoc Arabic lessons from the host family, the neighbour's teenage daughter and the village bus driver. I always attempted formal introductions in Arabic. It was not until the final month that the Director of one of the NGO branches responded to my request for a translator. This meant that I was no longer dependent on members of staff who had to negotiate their work in order to accommodate me.

As a result of my own limitations and the difficulties I experienced in terms of access to local communities in the OPT, the day to day conversations with the host family, in particular with the Father over breakfasts, became very meaningful. It was not my intention to steer these conversations but rather to participate and listen. Whenever the host family and people in their village told me stories, it gave me insights into their lives and the significance of their shared understandings. These moments, sharing food with the women from the church committee and gathering on the veranda in the evening with the family and neighbours, made the place seem more familiar. I learnt more of their ideas about Palestine and the people who live there, and something about each of them as well as myself. I became conscious that I wanted to distance myself from my identity as a researcher here and become a part of village life. The people in the village seemed more concerned with what kind of person I was rather than my research and I felt a continual sense of discomfort with simultaneously occupying the role as a researcher and visitor. With time, my stay with the family allowed relationships to develop:

***Field diary - 8<sup>th</sup> August 2013***

*As time passes, the Father of the family refills my cup with strong black coffee and we begin to talk more about life and what we value. He seems such a generous man, not only in the extent of his hospitality but with his stories. We discuss traditional Palestinian food and I am keen to identify the trees around the house. He tells me we can look at them later. We share a love for growing and working on the land.*

The difficulties I encountered negotiating access to the case study NGO and the communities they work with, meant that I returned with fragmentary accounts of experiences and encounters. In most situations with the case study NGO I remained an observer, (perhaps partly due to existing power relations between the NGO and the communities as well as the cultural constraints I experienced as a female researcher) and I questioned how adequate this position was for privileging the accounts of local people. As mentioned, in terms of my involvement in the village where I was staying, the research began to draw more on ethnographic techniques. This data consisted of personal conversations and some observations. These helped me to pursue the narratives behind some of the stories and situations that I was witnessing.

The field diary assumed a greater role than I had anticipated as it became an important part of the process of reflection and documented the development of my understanding of personal experiences and observations. For this reason, the analysis draws on extracts from my field diary. Details of conversations were also recorded along with field notes that gave more of the context of each encounter. Occasionally, these were brief notes taken in moments between activities or single words scribbled down during a bus journey to prompt more descriptive accounts at the end of the day. Where possible, the actual words from conversations were recorded. Some entries

into the field journal were often random in style, as words spilled out with all the drifting thoughts from the day. Sometimes I wanted to preserve everything by writing it down and at other times I just wanted to be present in the experience. Although the field journal is about other people, I recognise that it is also about my experiences, my loneliness and insecurities as a researcher and my need to remember such a significant time in my life.

The research methods became responsive to the politics of the field. Although the data collection was still the result of the qualitative approach that was conceived prior to field work, personal conversations and observations provided context-dependent knowledge and narratives where interviews were not possible. The research does not understand these methods to be interchangeable with ethnography and I am reluctant to label my study so, as the intent was not '...to render a theory of cultural behaviour' through an inductive process (Wolcott, 1995: 86). The research question necessitated an understanding of meaning-making in relation to water and the interpretation of discourse and action but through the chosen framework of sense of place and with a commitment to the learning of NGOs and communities:

'Qualitative researchers need not have ethnography in mind as they embark on descriptive / interpretive studies, but they must have something in mind to guide their work ...' (Wolcott, 1995: 108)

Despite my interest in the work of a number of academic role models in ecological anthropology, I was conscious that my background and training were in different areas. It is rare for ethnographic research to start with theory and while acknowledging the value of this process, the development of the meaning-based framework in Chapter 2 (Figure 2.0), helped me to appreciate the multifaceted nature of water and the dynamics of contextual factors prior to the fieldwork. My understanding of culture has developed from the work of Sahlins (1979) and the contributions from the Research Group into 'Wellbeing in Developing Countries' (WeD) at the University of Bath, (see Gough and McGregor, 2007) and in particular White (2006, 2008). All dimensions of the meaning-based framework are understood to be culturally embedded and interrelated, recognising that culture informs the meaning water has, how it is utilised and valued. The meaning-based framework was developed as a way of engaging with and exploring local understandings of water but it was hoped that the interviews would provide openings for people to describe their experiences in relation to water and to recount stories about their lives. The preliminary categories were never considered sacrosanct and have been responsive to the data.

A critical form of interpretivism was always conceived for the research methodology to understand how people interpret their own lives and experiences of water issues and how NGOs engage with and (re)present these issues. However, as discussed, in the specific context of these interviews, the method was subject to the effects of the power relations between the NGO and residents of the case study village and

settlement. In response to this, I explored ideas for group interviews and particularly participatory activities during the fieldwork, for its potential to better represent local lived experiences and understandings (this will be discussed further). Despite these attempts, I returned from Palestine feeling self-conscious about the small number of accounts from village residents and my failure to make the process more equitable. I remained committed to pursuing a dialogue with the people in the communities and NGOs throughout the analysis. Beyond this stage, it is hoped that a report summarising the findings of this research may engage these different stakeholders in discussions about participation and learning, through which practice can be negotiated.

### **3.54 The politics of access**

The research sought to privilege the accounts of people who are experiencing poverty and marginalisation. On entering the field however, access to more marginalised communities was restricted due to the system of zoning that divides the West Bank into Areas A, B and C. As an outcome of the Oslo II Agreement, 60 per cent of the West Bank falls within Area C, where Israel exercises civil and security control (Selby, 2013). EWASH (2012) claim that this is where the majority of humanitarian needs are. I was often held at check points with members of the NGO and experienced road blockades which meant that plans had to be abandoned.

In addition to these barriers at the macro-level, attempts to negotiate visits to a number of villages that I had identified as potential partners for the research, were discouraged by NGO staff due to poor access in terms of the remoteness of the location and the absence of rural roads. Water interventions in these villages require additional resources as a result of their remoteness.

The research employed purposive sampling as a way of identifying people who are experiencing marginalisation and water shortages and with whom the NGO have formed relationships through their activities. Published reports by the NGO provided information relating to the geography of these villages, water resources and poverty assessments. The NGO operates in northern, central and southern areas of the West Bank so I made arrangements to organise my time between these offices, with the intention of selecting cases (villages) within each region. Expectant compromises were made in the selection of the cases depending on the NGO's own plans for field activities. I had proposed to interview residents from each village over a number of visits and where this was possible, it provided greater insight into their daily lives. On one return visit to a village in the south, members of the women's committee organised themselves to meet with me. However, my experience with another regional office was more problematic due to the nature of their brief field visits and a particular engineer's role as gatekeeper. The engineer appeared to be well connected, introducing me to government officials, (after which I was told not to mention the meeting to the Director), members of the village council and the head of the village

where we spent the majority of our time. I was directed to interviewees that were part of his network and specifically those relationships that represented an important social hierarchy.

**Field diary- 18<sup>th</sup> September 2013**

*The male engineer doesn't seem pleased to see me this morning and lights a cigarette before greeting me. He makes no attempt to hide his annoyance as he heads off to the car, leaving me to trail behind. When we arrive in the village, he takes a seat around a dusty table which is placed beneath the shade of a tree and lights another cigarette. A man appears and greets him before pouring a cup of coffee for them both. I have been standing next to the female researcher anticipating her move to join them in the shade. Unbeknown to me, this is not the plan and I am told to go with the female researcher to speak to the women from each household. She doesn't speak English and I fear it is going to be yet another frustrating day.*

This vignette encapsulates the hostility or rather apathy I often received on arrival to one of the NGO offices. Fortunately, this was not representative of all my experiences with members of staff from the case study NGO. Other members of staff were open with their views relating to regional water issues and NGO activity in the water sector, including their frustrations and hopes for change. Access goes beyond just physical presence and without the interest of the organisation in the research, there are considerable barriers to fieldwork. My thoughts were obsessed with my failure to build relationships within the case study NGO and the reasoning for this. The Executive Director was forthcoming with documentary sources detailing the NGO's objectives, projects and research activities but it proved impossible to arrange a personal interview and to pursue some of my field observations with them. After some initial meetings and having initiated contact with all of the NGO's branch managers on my behalf, the Executive Director was absent for the remainder of my stay.

**Field diary- 19<sup>th</sup> August 2013**

*I spent most of the day alone in the office again. I haven't received much of a welcome into the NGO and no formal introductions have been made by the Director. I feel isolated and increasingly anxious that I won't be able to negotiate engagement with the staff or the communities they work in. I come and go without acknowledgement and I am aware that the growing discomfort I feel at being an outsider, is affecting my confidence to go in to the office at all. What am I doing here? I have no doubt that the staff are asking the same question. Researchers must visit for a short time and then leave never to return, possibly offering something during their stay. But now that I am here, I'm even questioning what I can offer them?*

I was directed to a number of dissertations that had been facilitated by the NGO, ranging from water pricing policy to water quality and poverty assessments. The NGO is familiar with social research but I was unable to gauge their assumptions and expectations of my research project. The initial conversation with the Executive



Director about the potential to explore dialogic approaches that could be put to the service of their water projects, was disappointingly short. There was a worrying familiarity with the use of the term participation, when hearing that participatory needs assessments were already being done. Whether or not it was their opinion that my social research was superfluous, I had hoped it potentially still offered scope for participatory methods to be extended to explore the dimensions that people identify and prioritise in water interventions as well as local categories of poverty assessment and value. This proposal seemed to align with the organisation's objective to empower communities.

As well as being bound up with a specific discourse, opportunities for learning can also be determined by relations of power. Relationships within organisations and between NGOs and local people not only determine the potential for participation and its form but access to shared ways of apprehending the world. During the fieldwork, I was often directed to the male head of the village or village council. I was expected to observe these formal practices but these affiliations created unequal dynamics between myself and residents of the village.

#### ***Field diary - 11<sup>th</sup> September 2013***

*I spend the morning meeting with the Director and one of the engineers who I am told is involved in the majority of their projects in this region. I feel reassured by this and gain some confidence back. As we drive off, I am told that we have to meet the Director of the local Government office for the region before we can start any field work. We arrive at some government offices and I am shown into a very grand office, where 10-12 men are gathered. It is a very formal meeting and I sit and smile politely as the men talk amongst themselves. The engineer is seated on the other side of the room, in conversation with one of the officials and I wonder what I am expected to present, if anything? Eventually, the Director formally welcomes me to Palestine and talks about the water issues in relation to the occupation. He welcomes my research and the involvement of the International community. After the meeting I am left waiting in a long corridor, where activity can be heard behind closed doors. We leave and I am told not to mention the meeting to the Director of this NGO office. It seems that this engineer has his own agenda and has utilised this time for his own interests.*

Even towards the end of the fieldwork when I was accompanied by a female interpreter, there were occasions when we were denied permission to meet with groups of women by male members of the village. I only succeeded in talking to women and gaining their perspectives and understandings when working with a male engineer from another branch of the NGO, to whom I did not have to justify my intentions to work with a range of groups. I was anxious to have the purpose of my visit explained to the women so that hopes for a new development project would not be raised. I learnt of this expectation on a previous visit to the village and it has prompted me to question the value of my research for the lives of these women ever since that meeting. Everything that has been done in the village by external



organisations seemed so temporary and I felt my brief presence in their lives was yet another example of this dynamic - a dynamic I had wanted to actively challenge and change.

The group interview provided the opportunity to listen to accounts of women's lives from two or even three generations and to record their experiences and perspectives of water issues. Twelve women, myself and the engineer gathered in a meeting room that the women regularly used so that the space was familiar and theirs. Speaking as individuals and as a group, the women acknowledged one another's experiences as their own. Unfortunately, I was unable to participate in further group discussions beyond this instance, as the other regional office worked in an entirely different way. Only visits to two Bedouin communities were possible here and the duration of these was variable, depending on the engineer's schedule. On these occasions, I interviewed individuals who were male heads of households, including the head of the village. I only managed to return to one of these communities for a second time, as the NGO needed to assess damage to the water infrastructure after the residents' homes were demolished by the Israeli army.

***Field diary - 23<sup>rd</sup> September 2013***

*We return to a scene of devastation. It appears that no structure has survived, apart from piles of contorted metal, crushed water tanks and some belongings that families rescued from the path of the bulldozers. The site looks as if it has witnessed a natural disaster. Only the men from the community remain, seated beneath a single tree in the centre of this scene. They are refugees to their homes once more. The Head of the Village Council moves between the men, clutching documents in his hand while he talks on his mobile phone which always seems to be ringing. They tell me it is not the first time that residents have witnessed the destruction of their homes. They talk about the nights events as something that is the fate of all Palestinians.*

From conversations with the Directors of the regional NGO offices and water engineers, there was a shared understanding that participation is a 'good thing' and an assumption that it is a means to better representation of the poorest and most marginalised people. Yet there was also a pervasive belief that the capacity to participate varied within these rural communities and any participatory research methods I wished to employ, would first require training workshops. The NGO advocated the importance of local knowledge but in terms of farmers, members of Bedouin communities and women being experts of their daily lives.

As discussed, I was uncomfortable with how extractive the interviewing process had become and as I had begun to build a good rapport with the female interpreter who was employed towards the end of my fieldwork, I approached her with initial ideas for two participatory learning and action activities. I explained that the participatory learning and action activities could build on local people's coping strategies and facilitate knowledge sharing. The first activity would focus discussions around

intervention mapping, to enable people to identify what they have access to and whether these interventions make sense to people. Causal flow diagrams were also proposed to explore how water issues are experienced locally and how they interact with local processes as well as the decisions people make and what strategies they employ, (including the constraints). I also produced a calendar that consisted of both images and Arabic words, charting annual rainfall, water quality, water source and availability. The interviews and observations captured one moment in time so these tools for analysis were designed to explore the complexity and dynamics in greater depth within the same villages. I needed to discuss the contribution that participatory methods could make with the NGO, due to the political dimensions of participation and the potential for it to serve multiple objectives. If the objective was to engage village residents to reflect on their situation and to make decisions on alternative water conservation strategies, then members of the NGO would need to become facilitators and so seek to minimise differences in power.

I encountered resistance to trialling these methods due to the planning and execution of training workshops that the NGO regarded as necessary in order for local people to learn how to participate in such activities. I had also intended to return to the other regional office in the last few weeks to negotiate access to the women's committee, having already engaged with them in a group setting. Regrettably, I was subject to a physical attack on my usual route to the central NGO office, after which I was unable to regain my confidence to complete that aspect of the field work.

The assault affected my relationship with the host family as they felt a sense of responsibility for my safety and perceived me to be 'quiet' and hence vulnerable to such things. They were concerned that no one from the village should learn about the incident, nor any other guests. The Father was aggrieved as this was the first incident with one of their guests and talked to me at length about 'his people' over a cup of tea. He accompanied me to the police station despite his reservations about the reduced capacity of an under resourced police force to respond. I felt partly responsible for the incident as I reflected on all the moments where I could have asserted myself against my adversary - a narrative that was suggested to me by the family. After this incident, I became increasingly anxious about travelling to field sites unaccompanied and made the difficult decision to leave, to the further upset of the host family.

The host family and certain individuals that I met during my stay were indubitably supportive in helping me to gain access to people who later became key informants whenever my plans with the case study NGO failed to happen. They not only directed me to people with experience and expertise in the NGO and water sector but they also advised me about local culture and my safety.

My host family and the women from the church committee frequently gave me the support that helped me through the challenges of field work. They all welcomed me into their lives and shared how deeply they love their land. I attended church services

with the Mother of the host family and weekly gatherings of the women's church committee, (the Father had trained to be a Priest and had resolved himself not to attend church in his retirement). The church offered the women a private space to meet, to provide mutual support and to collectively mourn and celebrate. I was also invited into some of the women's homes and visited their land and smaller home gardens.

### **3.55 The researcher**

I have already discussed some of the barriers to access that I experienced as a female researcher but at times I was able to transcend certain boundaries relating to gender and could talk to both men and women in rural villages and in official contexts. I gained legitimacy as I was perceived to be an educated doctorate student.

My appearance was also a factor in shaping my relationships and engagements with others. Despite my judgements of modest clothing after observing the women in the host village, I felt uncomfortable with the attention I received from men in the city. The women at the central NGO office wore Hijabs which prompted me to make what I felt to be significant alterations to my appearance, covering myself with additional layers of clothing but I chose not to cover my head. Despite this, I still felt conspicuous and the street harassment continued, so I initiated conversations with the host family and women in the village about my experiences. Street harassment is perceived to be increasing, related to the growth of a misogynistic culture, which they feel is ever decreasing the visibility of women in society. However, I felt safe in the host village and frequently walked unaccompanied to the shop, church and the community centre where both men and women greeted me in these spaces.

### **3.56 Translating the stories**

It was not until the second month of the field work that I was assisted by a female translator. The translator's role enabled me to enter into a dialogue with the residents and their stories became much more their own. The translator had previously worked with the case study NGO so she had insight and experience of water interventions in terms of the social processes and activities involved. She was also from the region and was intimately aware of the problems that people were experiencing. Our relationship developed over the remaining few weeks of the fieldwork, and together with an engineer, they continued to be involved in verifying my representations and observations. Both the translator and the engineer spoke critically about environmental, social and political issues as well as their commitment to a collective idea of Palestine; the people and the land. These conversations helped me to further

develop an understanding of local meanings and the reality of water shortages detached from the narratives as well as the politics of aid:

***Field diary - 29th August 2013***

*On the journey back to the bus station, the engineer tells me about his involvement in a USAID funded project to build a school and to provide sanitation and water. 'I accompanied them to the school. I remember it was the time of the attack on Iraq. We explained to the students that the visitors were from the USA and told them about the project. A female student stood up and said "you give us money from your right hand and kill us with your left hand, so how can you tell us you are supporting us"... He later said to me, 'you ask the people how they perceive our 'great help'. This is a perception, voiced by others, that beneficiaries of interventions remain in poverty and continue to live without enough water at the expense of grassroots action.*

The method of recording the interviews varied according to the nature of the encounter. For the majority of the interviews, it was possible to use a voice recorder. Interviews were transcribed on the same day before deleting the recording. The omission of place and participant names was intended to protect already vulnerable people. Data files were also coded and any contact details that were given to me, were emailed to my university account rather than being stored on my computer.

### **3.57 Triangulation**

For the first three weeks of the fieldwork, while I was negotiating access to the villages, I spent time analysing NGO documents and research reports as well as official Government papers. These provided contextual information about processes at the macro level and consistent narratives about water shortages. I was also able to explore the role of the NGO, its structure, discourse and reported practices. This process generated a number of questions that were later integrated into the interviews with the Regional Directors of the NGO and the engineers.

The analysis involved triangulating interview transcripts and field notes with these secondary sources in order to examine the interpretations further rather than being a search for confirmation of a single meaning:

'... what is involved in triangulation is a matter not of checking whether data are valid but, at best, of discovering which inferences from those data seem more likely to be valid'. (Hammersley, 1990: 184)

As mentioned, the etic categories that summarise key theoretical ideas about sense of place and the multiple dimensions of water also provided analytic themes. Further categories were identified from the data and both etic and emic categories will be

discussed in the following data-led chapters. It is hoped that a comparative perspective of the analytical themes will serve the primacy of the accounts of local people.

### **3.58 After the analysis**

Following the fieldwork and the initial data analysis, it became apparent that it would be valuable to conduct additional interviews with NGOs operating in the WASH sector in the Middle East, specifically in the OPT, and academic institutes, to clarify and further explore both certain aspects of the research findings and learning approaches to community-based water interventions. The second phase of interviews are italicised in Figure 3.0 to distinguish this later phase of data collection. All of the interviews were conducted by telephone or Skype. Representatives from the NGOs and academic institutes were selected in order to contribute to the dialogue around learning, place and water interventions. They emphasise the significance of the tensions between the universal and the particular; the global and the local; and learning approaches that are emerging from practice and action-based research, which provide valuable insights into current intervention models in the West Bank. These findings are discussed in section 6.4. The second phase of interviews also enabled me to explore the issues around current donor models and sustainability in WASH more broadly.

This research recognises that the accounts of Israeli NGOs who have been working with marginalised Palestinians are also important and that such efforts and collaborations need to be heard amid the conflict narratives. Subsequently, the Arava Institute, which is an Israeli NGO and research institute was selected. The NGO engages with water-related issues and work with marginalised Palestinian communities both within Israel and the West Bank. At this stage of the research I was able to share observations from the fieldwork, thereby gaining their interpretations of the situation concerning water shortages; intervention processes and the involvement of external actors; their understandings of water technologies and practice at the local level, and their experiences of knowledge exchange. The NGO was also chosen due to the research interest in the collaborative and deliberative learning processes that were thought more likely to occur in these cases.

Individuals were also selected from international NGOs due to their knowledge and experience of water, sanitation and hygiene (WASH), both in the West Bank and Gaza as well as in contexts that are defined by the NGO as 'fragile', requiring emergency WASH interventions. The Global WASH Advisor for Tearfund and Oxfam's Regional WASH Advisor for the Middle East were invited to comment on reflections around key areas, ranging from the transition from emergency water interventions to longer term WASH processes and other issues relating to questions of sustainability; key factors that influence donor and NGO responses to water issues in 'fragile' contexts and the West Bank in particular; current practice and policy that the NGOs advocate

(including water technologies), and the patterns of interactions that emerge in water interventions.

Academics from the Environmental Learning Research Centre at Rhodes University, South Africa and the Institute of Development Studies at the University of Sussex also engaged in discussions around knowledge, practice and power in water interventions, water politics, and the relationship between learning and sustainable water resource management.

## Chapter 4: Local Understandings and Experiences of Place and Water

### 4.0 Introduction

'Each of us bears the loss of place and of history acutely, the given we share at the root of our various lives'. (Said, 1986: 149)

Conversations with local people about water often returned to the land; to the ancient olive trees that grow in stone and the rocks from which water flows. They are narratives of a place lived in memories, of a time before the occupation of the Palestinian Territories. Both land and water have become symbolic of multiple meanings and values that have significance on how people live their lives and how they have adapted to cope with water shortages in the nadir of conflict.

Local narratives are rooted in a time around the events of 1967 when the land and water became symbolic of exile, dispossession and loss for residents of the village in the southern hills of Hebron. The placement of this memory holds significance for understanding present lived experiences as well as environmental change and cultural expressions of this. Local people make claims to the land and sources of water through descriptions of their everyday lives both before and after this time:

*"The land means everything, our water, our animals, and we cultivate from it, the figs ... the fruits ...".* (Female resident in the southern Hebron hills)

The narratives describe a unique relationship between their lives, water and the land but do not claim to represent one coherent Palestinian sense of place. The stories are told by Palestinians who have remained in their village, despite experiencing the dispossession of land and water resources and unrecognisable changes to the geography of the land; Palestinians who have experienced upheavals and exile from their home; and Palestinians who face restrictions on their movements and increasing marginalisation as they attempt to continue with their way of life. The older generations share memories interrupted by conflict and loss, while the younger generations learn about the past through the stories of others, as they remember them. The research recognises that these stories are rooted in a place(s), time and personal experiences (Riessman, 1993: 5). The stories cannot encompass the complexity of experiences but they are theirs and make a difference to all of us.

This chapter will explore meaning and local experiences. By focusing on water and place, we can learn something about lived experiences, histories, beliefs, values and identity. This is particularly relevant given the focus of the research question on the role of mediation as a learning strategy to connect practice to local understandings, in NGO-led community-based water interventions. Returning to the aims of this research, local accounts of water and place will inform the development of the

meaning-based framework and an understanding of the interrelationships between the multiple dimensions of meaning.

In my efforts to re-present local accounts of water, I connect the experienced with the symbolic, using sense of place as an analytical framework. In interpreting local accounts and the significance of local meanings around water and place, the categories from the meaning-based framework in Chapter 2 are explored in relation to how they emerge from the data. Therefore some categories are discussed together due to the interrelationships that were observed, while others are analysed separately. The meaning-based framework is reproduced here in Figure 4.0 but is revised in section 4.9 as a result of a number of themes that emerged from the data analysis and the illustrated importance of these in both the case study village and settlement.



Figure 4.0 Meaning-based framework

Water as ...	<b>Sense of Place as ...</b>
	<b>The Symbolic</b> <i>life / gift / sustenance</i>
	<b>Relationships</b> <i>belonging / attachment / power</i>
	<b>Identity</b> <i>self / collective / imagined</i>
	<b>Place Dependence</b> <i>security / social practices / economics</i>
	<b>Activity</b> <i>production / livelihood activities / income and assets / education and skills</i>
	<b>Nature</b> <i>nurturer of human fulfilment / natural capital / conservation / conflict / teacher</i>
	<b>Heritage</b> <i>shared histories / inheritance / stewardship / responsibilities</i>
	<b>Knowledge and adaptation</b> <i>technology / informal and formal systems / ecological and social knowledge / knowledge sharing / participation / local innovation</i>
	<b>Uncertainty</b> <i>dynamic processes and systems / temporal and spatial variability / location of water as an input and as an output</i>

#### 4.1 Description of the case study areas

The rural village in the Hebron District of the West bank is high in the southern hills of Hebron and is relatively isolated due to its distance from any major roads. There are no roads leading to the village, no piped water supply and no electricity. Clusters of comparably small stone houses sit amongst stone cisterns, caves and the ruins of buildings that were destroyed during the conflict in 1948. Some of the cave dwellings are believed to date back to Roman times. The land slopes steeply down from the houses to a wire fence that separates the residents from more gently sloping areas and flatter plains, which are well vegetated and irrigated. The fence was constructed in 2005 and I am told by the engineer from the case study NGO that it annexed over half of the land, predominantly the village fields, which are traditionally away from the centre of rural villages. The residents of the village settled here on a permanent basis, due to good groundwater resources, which sustained agriculture and livestock rearing. The village has a council, which is a local government body of the Palestinian Authority. Although the residents of the village report that people have left the village and are continuing to abandon their homes, no data is available to analyse population changes in the area since the war in 1948 and the subsequent occupation of the Palestinian Territories.

Unlike the rural village in Hebron, the boundaries of the Bedouin settlement are not fixed, in the sense that the shepherds migrate seasonally with their herds to other places, while their families stay in the home. Residents have traditionally been herders, utilising a network of agricultural cisterns, wells and pools to water their herds of sheep and goats. Located in the Jordan Valley, the settlements in this area are now considered to be the most marginalised since the designation of the valley as a restricted military zone (Area C). 60 per cent of the West Bank is now designated as Area C, over which Israel maintains 'full civil and security control' (Selby, 2013: 9). Use of the road to and from the settlement is restricted to certain days and times. This road is the only accessible route to health care facilities and schools.

#### 4.2 Memories of place and water: The four springs

*"Before 1967, people here have the right to go to the land and there is three springs and they can bring water easily and free, they don't need money and there is enough water for all the people ... They could use the springs daily ... Public cisterns were for the people and had huge capacity. The water from the spring was enough". (Female resident in the southern Hebron hills)*

In the act of remembering places, local people recounted something about a social history, culture, identity and landscape. The residents of the village in Hebron describe having equal access to water (*for all the people*), before the events of 1967, which was of a certain quality (*fresh*), and of a sufficient quantity. This was not merely *enough*

water for survival or to meet basic needs but local people describe having water for personal use, for household use and for their livelihoods. There is a strong narrative of self-sufficiency that emphasises the importance of water for dignity and independence:

*"Before the wall, in that area there is a lot of farmers, agriculture and people that keep animals. They have freedom to go to their land and plant their land, there is many kind of animal there and this was a good economic source for them but now they cannot plant their land, they cannot do anything. Inside the wall there are a lot of ancient cisterns and springs and they cannot use it".* (Female resident in the southern Hebron hills)

In their narratives, the female residents from the village women's committee attempted to define what is collectively theirs. This is notably different from the shepherds in the Bedouin settlement who discuss resources in relation to the individual's household and local NGO accounts of failed attempts at collective projects within many Palestinian communities.

The female residents from the women's committee emphasise local people's rights to the land and water, of which accessibility is a significant part, describing both physical accessibility to the land and sources of water as well as an economic accessibility. Nature provides 'free' water 'for all'. Traditional water management techniques included channels from springs and the storage of water in cisterns (Photo A). These technologies were central to the lives of all the residents of the village and have a long history in the region.

Photo A: Traditional water cistern



**Field diary - 28th August 2013**

*I am shown the ancient cisterns dating back to the Roman and Byzantine Empires and burial caves. I am told that there is a long history of people living here who knew how to capture flowing water. The residents of the village used to drink water from their hands from four springs that are now on the other side of the fence. They could rely on that water and they would carry containers to the rocks and fill them.*

Water from the four springs was diverted to fields, collected and used or stored. The women recalled how every household had a cistern, which was dug into the ground where a natural depression already existed and was subsequently lined with stones to capture rainwater (nowadays concrete is used). Rainwater harvesting is a traditional technique used for water conservation to support people through the dry season when groundwater supplies are low. The water was used for washing, bathing, home gardens and for livestock but was rarely used for drinking. The village also had a large communal cistern that was further away from the village centre near to the residents' fields, (now behind the security fence). The village cistern could be used by all residents and was a source of community pride:

*"... opposite to you there is a huge cistern and huge well for storing water and spring water. It is now after the wall and we are not allowed to use ... all of the NGOs' cisterns are not equal to this cistern size".* (Female resident in the southern Hebron hills)

There is a relation between water use from communal sources of water and land ownership. Water was communally managed and distributed from the village springs to each farmer in proportion to the area of land that was owned and cultivated. Communal cisterns could be used for watering livestock, while women took water for domestic needs. The water sources would have demarcated the land and the people who used them from the village. Similarly, the movements of Bedouin shepherds in the Jordan Valley have traditionally been determined by water and forage for their herd. Use of communal cisterns would have been negotiated between farmers and shepherds in the area. Whether these arrangements would have persisted today without change is unknown, as local people have been deprived of the opportunity to build a future from their past.

A young Bedouin shepherd described how central "*changing places*" was to his way of life and for those generations that lived on the land before him. He continues to follow the daily movements and seasonal rhythms that his grandfather and father intimately knew, guiding the herds into the mountains during the summer months. Yet the continuity of the land no longer exists and this is not only challenging their water security but their way of life:

*"... he lives here because it is his land and his family live here for a long time. It is all he has. His grandfather and father lived here and they were raising their livestock ...*

*He can stand on his land and the main thing is not to lose it". (Bedouin Shepherd A, Jordan Valley)*

The Jordan valley has been declared within a range of 'closed military areas' since the occupation of the Palestinian Territories. As a result the Bedouin shepherds and their families face restrictions on their movements, confiscation of their property, including water tanks and the demolition of their homes, which I witnessed on one visit to the area.

#### ***Field diary - 23<sup>rd</sup> September 2013***

*With a military base and settlement overlooking the community, I have been told by the NGO that contact with the community is always brief. We arrive to a scene of devastation. It appears that no structure has survived, apart from piles of contorted metal, crushed water tanks and some belongings that families rescued from the path of the bulldozers. The site looks as if it has witnessed a natural disaster. Only the men from the community remain, seated beneath a single tree in the centre of this scene. They are refugees to their homes once more ... The Head of the Village Council moves between the men, clutching documents in his hand while he talks on his mobile phone which always seems to be ringing. They tell me it is not the first time that residents have witnessed the destruction of their homes. They talk about the night's events as something that is the fate of all Palestinians. There is an acceptance that there is no relief and I listen to the stories, all uniquely sad, not knowing what to say ... Their only focus now is to rebuild their homes and to continue with their lives in this place.*

When I spoke to the same Bedouin shepherd following the night's events, his family had taken refuge in a nearby village. For him, there was no choice but to stay. He said, *"I cannot live without this place, this life and this land"*. As place becomes one of marginality and displacement, narratives of belonging can also function as narratives of resistance. This sense of place alongside experiences of exile and dispossession is not always captured in the literature, as discussed in Chapter 2. When talking about their daily lives and water, the Bedouin shepherds expressed a profound relationship to the land which has become subsumed into experience and identity. The metaphors that emerged will be discussed in the following section.

### **4.3 Identity and symbolic relationships with water and place**

*"There is a relationship between life and the land". (Female resident, southern Hebron hills)*

Local people's relationship to place requires a more dynamic and multidimensional understanding than perhaps the concepts of dwelling and rootedness allow. Place affects us and how we live our lives (Smaldone et al., 2005; Feld and Basso, 1996). It enables people to give meaning to experiences in the past and present, and can

become strongly connected to identity (Manzo, 2005). Yet it is evident from the stories of local people in the Hebron hills and the Jordan Valley that lived experiences also shape the meaning given to water and place in a dynamic process over time and there are social, cultural, political and environmental dimensions to this process that shape memory, metaphors and identity.

The village fields, terraced hillsides on which olive trees grow and stone cisterns are all artefacts that have come to symbolise and assert a historical presence on the land. On a visit to the host family's home village, the father talked about past generations working in the fields and how the olive trees connect him to his family's history and cultural traditions such as the olive harvest:

***Field diary - 12th September 2013***

*The NGO office is unable to accommodate me again until Sunday so I take the opportunity to go with the father to visit his mother and brother in a nearby rural village. The white stone house is surrounded by the family's fields and olive groves. There are hundreds of olive trees all casting shade across the dusty ground. The Father tells me about his families farming heritage and the generations that have harvested olives from the land. The harvest is a special time when all of the families return to the fields and come together, sharing food and stories in the fields. It is a time of celebration.*

Many of the stories from the female residents at the women's committee meeting, recollect agricultural landscapes and agro-pastoral acts, which were central to their daily lives and to their self-sufficiency:

*"... they would take their food and their cheese and their milk and ... sell the products and buy others ... they eat the wheat from the cultivated land so she doesn't remember that she buy any wheat, on the contrary she sells it. They make flour and they do not ask anyone to help them". (Discussion with the Women's Committee, southern Hebron hills)*

Wheat has traditionally been an important staple that would be stored and used by households until the following year's harvest:

*"When they came, they shot ... people and fired missiles. I remember it was July as the wheat was growing and all of the wheat was burnt ...". (Female resident, southern Hebron hills)*

Although this is a memory of a violent history, it is also evocative of environmental loss. The woman from the village is sharing her memories of an agricultural landscape and a way of life that was concurrently lost with access to the land and water sources:

*"The land means livelihood and life". (Discussion with the Women's Committee, southern Hebron hills)*



This historical presence is visible in: how people adapted to the environment using dryland agriculture; how the Bedouin migrate with their herd to higher elevations due to the temporal variations in the availability of water (Photo B); and, how people collect rainfall runoff or settled near to water sources (the Jordan River or near to springs). It not only asserts a long connection with place but also the persistence of a way of being. It is argued by Said (2002) to have become a political metaphor as a claim to the land, a history, and with this, to an existence in the present:

'Perhaps the greatest battle Palestinians have waged as a people has been over the right to a remembered presence and, with that presence, the right to possess and reclaim a collective historical reality ...'. (Said, 2002: 250)

Said (1986, 2002) argues that the idea of belonging to the land has been maintained and remembered as a collective resistance to dispossession, loss and exile. It was also frequently drawn upon by the Bedouin shepherds to express an experienced sense of place:

***Field diary - 23<sup>rd</sup> September 2013***

*In the distance, a man is walking towards the group, his face covered by a Keffiyeh and a herd of sheep are following his path. He is swinging a stick and is surrounded by a cloud of dust. He has command over his herd and a presence in this landscape. As he emerges from the dust, he unwraps his Keffiyeh and holds out his hands under a dripping tap at one of the remaining water tankers to splash his face with water. The sheep follow and move from metal trough to metal trough in search of water themselves. It is a hot day and there is no respite from the heat in this area as there are so few trees. He joins us in the group and I can now see that he is a young man, with striking eyes and bright white teeth.*

*"... he feels better staying here. Other places are crowded but here there is space for the sheep and food naturally grows and there are not many people. It is a very difficult way to live especially in the winter when the conditions become very tough for them. But he asks where else could they go? It is impossible for anyone else to live in this way. He says that despite the difficulties he is happy in his life. No one is managing him. He is working very hard but he is happy. He can stand on his land and the main thing is not to lose it. When I go through the mountains with our sheep we have everything we need". (Bedouin Shepherd A, Jordan Valley)*

Land, water and self seem to merge in the Bedouin shepherds' narratives of place and their daily lives. The characteristics of the landscape, whether describing the mountains or the caves or springs, not only define the settlement where local people live in these areas but are, to use a phrase from Feld and Basso, (1996:11) 'metaphorically tied' to their identities and express important social values. For example, the men express the harshness of the environment and claim that "*it is impossible for anyone else to live in this way*" (Bedouin Shepherd, Jordan Valley), "*only we understand this life. We cannot imagine anything else*" (Head of the Bedouin settlement, Jordan Valley). For these metaphors to

work as a narrative of local or collective identity, these individuals believe they are at one with the land and have its strength and resilience:

*"The land is the same as our soul. Land and water mean honour".* (Representative B of the case study NGO)

Photo B: A Bedouin Shepherd's herd in mountains of the Jordan Valley



McKean Parmenter (1994) discusses how the symbolism surrounding the water cistern has evolved to express resistance and security and the association of the olive tree with communal rootedness, both of which are bound to identity. This suggests that as political processes change the environment and society, local people's idea of self and the meanings they give to place also change. However, part of this understanding of being resourceful and indomitable, also involves imagining the Other. As Basso, (1996b: 56) argues, '... places also provide points from which to look out on life...'. The Bedouin shepherds refer to the Other, (whether other people or places) in their claims about self:

*"Without the mountain I cannot live. It is the same for our children. He has one son, 22 years. Last year, he went back to the village, his son didn't know where the family home was so he left him to go in the street to test him to see if he knows the home or not. His son passed the home and went out of the village. When he came back, he said this is my home. It's a better life for us in this place. It is part of us".* (Head of the Bedouin settlement, Jordan Valley)

The different narratives suggest that place-based meanings play a significant role in everyday lives, as argued by Smaldone et al., (2005) but these are not experienced in



the same way by local people, depending on their gender, age and ethnicity. While the environment places constraints on people, for example, whether there is predominantly surface water or ground water sources near to a village, water also functions to fulfil a cultural life in which social identities and relationships will shape the meanings through which water is understood:

'The very form of social existence of material force is determined by its integration in the cultural system'. (Sahlins, 1976: 206)

The Bedouin shepherds discussed the difficulties they experience in asserting their need for water for livestock amongst farmers who are also making claims on communal springs and cisterns. However, the interests of women did not appear to be discussed or represented in the public realm. The women from the village were conscious that as periods of water shortages lengthen and become more frequent, they are disproportionately affected and carry the stresses that trying to cope with less water brings. Women are responsible for water-related tasks within the household and make key decisions regarding which water sources to use, whether the amount of water that is available will meet the needs of the family until the end of the dry season and what further coping strategies will have to be employed:

*"All of us have to save water".* (Discussion with the Women's Committee, southern Hebron hills)

*"They worry about the water all of the time, especially in the summer".* (Discussion with the Women's Committee, southern Hebron hills)

Unlike the narratives given by the Bedouin shepherds, the women emphasised different aspects of water beyond its quantity, particularly the quality of the water from various sources. They describe incidences of water-related diseases in their families, such as diarrhoeal disease (caused by waterborne microorganisms), which they link to water from private vendors and from cisterns. Larvae (from unspecified species), were visible in a bottle of turbid water that a woman had collected from a cistern to show us:

*"...she raises the issue that now they are taking from cisterns, they have many cases of diseases, related to the water quality. She says my kids are suffering- they suffer from diarrhoea. She says the same for the [pointing at the other women]. The women jointly talk about one hundred cases of water pollution related illness" (Interpreter at the Village Women's Committee meeting). A member of the group asks why they have not been given water filters as part of the cistern rehabilitation projects?* (Discussion with the Women's Committee, southern Hebron hills)

The women understand the risks associated with using water from these sources for drinking and cooking but assert that unless NGOs provide the technology to treat drinking water at the household level, they are unable to employ methods such as filtration and chemical treatment:

*"There are worms in the water because it is rainwater harvested from the catchment, an uncontrolled catchment. They [NGOs], bring chlorine she says ... The chlorine was ok but after that we don't have chlorine ...". (Discussion with the Women's Committee, southern Hebron hills)*

The case study NGO conducted the bacteriological testing of drinking water samples from 182 households across the West Bank in 2011, funded by the European Commission (Document 3). 85 per cent of households did not have access to piped water supplies so samples were taken from rainwater and tankered water sources, 90 per cent of which were stored in cisterns:

*'The most significant parameters of the monitoring in terms of water quality were turbidity, fecal and total coliforms as microbiological indicators while other parameters such as pH, chlorine, TDS/EC/Salinity and nitrate were tested and were found to be mostly complying with the WHO standards. High bacteriological pollution was found all over the study area: TC and FC contamination ( $FC > 0$  and  $TC > 0$ ) was present in 84% and 69% of the samples respectively. Most noteworthy was that the high TC levels detected indicate the bad condition of the cisterns in terms of cleanness and existence of dirty soil. This was emphasized by high FC levels, indicating the existence of fecal matter (mainly from nonhuman sources) mixed with the catchment area's soil particles'. (Document 3: 5)*

Due to the complexity of detecting all disease-causing bacteria (pathogens), indicator species of bacteria are typically analysed in samples of drinking water (Cairncross, 1996). The NGO study analysed the presence of total coliform and faecal coliform as indicators of the presence of potential pathogens in sources of drinking water. The presence of total coliform and faecal coliform in the samples indicated faecal contamination but this does not determine if water-borne disease is occurring. Cairncross (1996) argues that untreated water sources almost always contain some faecal coliforms. This observation suggests that further research could be beneficial to determine how levels of total coliform and faecal coliform have changed over time and whether the incidence of water-borne diseases have concurrently increased. It is important to acknowledge that the quality of drinking water is not always considered to be a priority when water is scarce so NGOs need to continue to engage with local people to discuss the factors that lead to microbiological contamination so that they can assess the risk and even develop safety standards with the NGO.

The sense of a loss of autonomy and agency pervades the narratives from the women in the village. Although they prioritise water for the household and the quality of water for drinking and cooking, the group discussed multiple aspirations for livelihood projects and activities related to household production. Cultural ideals and social expectations place a responsibility on women for the welfare of the household but the plurality of ways that the women make choices regarding water use, suggested a need to negotiate their roles and the process of interventions:

*"Now I depend on organisations and others to survive". (Female resident in the southern Hebron hills)*

#### **4.4 Social relationships for water and understanding place**

*'Consider the tremendous upheavals since 1948, each of which effectively destroyed the ecology of our previous existence'. (Said, 1986: 18)*

With the loss of geographical continuity and the restrictions on their movements, people from the village expressed the loss of community and village life. Their stories begin with the conflict in 1967 but describe the effects of the security fence that prevents them from accessing their fields and the village water sources:

*"People were ordered to take something from their houses, they have been killed and returned as dead bodies...The aunt of this woman is one of them [pointing to a woman in the committee]. She was twenty to thirty years old at that time. Few people survived ... Those who are hide themselves in the caves. After the war, people have tents and they live seven months in the tents".*

*"... now we will find many houses with no people living in. If the grandmother and grandfather lived here and died, the other people are afraid for their sons and their kids and they try to go far away from the wall". (Discussion with the Women's Committee, southern Hebron hills)*

The need to *"encourage those people who left their houses to come back again"* and to *"attract projects to rehabilitate the area"* (Female resident in the southern Hebron hills), shaped the formation of a women's committee in the village. The female residents of the village utilised the relationships they had formed with other women to create a committee, based on shared understandings of collective wellbeing and collective action. Reciprocity is an important social value that local people practice and draw upon for their survival. During water shortages, women described times when they have had to approach family members for water and have negotiated access to neighbouring village cisterns:

*"... if there is enough for their needs then they help others. There is inside feeling that for us, it is forbidden to drink water when our neighbour cannot drink water. It is tradition, our religion... She can take one or two buckets [of water from neighbours]. Sometimes the neighbour will need her support. There is an exchange". (Female resident in the southern Hebron hills)*

By forming these relationships through social interactions and affiliations, White (2008) argues that people come to understand their own abilities and how outcomes can be realised. Research suggests that social relationships play a significant role in determining both individual's and groups' ability to adapt (e.g. Camfield et al., 2006).

Traditionally, *'each family is responsible for their water source'* and *'each family has one cistern'*, (female resident in the southern Hebron hills) but water shortages have necessitated the negotiation of social arrangements and ownership. However, it must be recognised that while access to water can be realised through social relationships, there are issues relating to this coping strategy in terms of the time it demands of women to travel by foot or donkey to neighbouring villages, their safety, water quality and conflict (particularly intra-household conflict, which will be discussed further):

*"This summer, all the neighbours' cisterns are empty so they went to cisterns far away from here, outside the village, with donkey and buckets and bring it back. Each family takes one bucket and they repeat this many times, especially on Ramadan, as they use a lot of water then. The owners of the other cistern let them come".* (Female resident in the southern Hebron hills)

NGO interventions in the village appear to maintain the idea that if local people organise themselves (for example by forming community-based institutions), the process will be representative of all needs and will bring benefits to even marginalised groups. The local NGO involved in water interventions, initiates contact with the Village Council, who are tasked with establishing a committee to participate in the process in various ways, from helping to select beneficiaries, to providing labour and/or funding.

The female residents who established the women's committee, recognise that the relationships formed by NGOs will affect the outcomes of the intervention and so they are seeking to strengthen their relations with different NGOs. By organising themselves, the women believe that they can make their needs more visible and can access material resources that they could not otherwise mobilise:

*"... they [NGOs] bring projects and then they say to us we bring this and this and this. Oxfam did cisterns, the [case study NGO] comes. Oxfam give sheep and goats for livelihood projects and will maybe give greenhouses ... They give her [nodding towards another lady who is speaking] five goats and from them she was able to build the walls of her house".* (Discussion with the Women's Committee, southern Hebron hills)

Alongside instances of solidarity in the face of water shortages, local people also experience conflict. Women are struggling to fulfil their responsibilities within the household and subsequently to meet social norms. The female residents from the committee meeting, openly discussed the impact that managing water is having on their marital relationships and relations with extended family members. Due to the water shortages and the increasing costs of water from private water vendors, women's decision-making in the household is being challenged:

*"... water quantity shortage affect all of her work in the house, she can't clean the floors well, in the kitchen she has to minimise use, in the Bathroom she has to*

*minimise and she has a small cistern that is not able to serve them. She has many problems with her husband for the water saving. He asks her to save the water, he is jobless and he asks her not to spend so much on water, when the cistern is finished, they take water from the family or her uncle, and they said don't take a lot of water, we need it. She can't irrigate any land near the house. Now a water truck of 10m<sup>3</sup> costs 100 US Dollars. If I call now she has to wait one month. For example, she asked for water in April and they will get it in one week [it is now August]". (Discussion with the Women's Committee, southern Hebron hills)*

Local people are increasingly reliant on water tankers (Photo C) from private vendors and NGOs as well as communal water sources that are being rehabilitated by NGOs. In some cases new technologies have been introduced for distributing water from such communal sources, (e.g. water pumps), which is challenging traditional social arrangements. Furthermore, with the internal displacement of people in the West Bank, different water users now need water in areas where they have sought refuge:

*"... the spring is not enough for them all because the spring is used for agriculture and drinking by tankers for other people. The spring is for irrigation and every farmer has a time from the spring and it make problem between these people who have the sheep to take water and the farmers because he collect more water. The spring is public but it benefits the farmer. Every day he have one hour, two hours. It is public for maybe one hundred farmers". (Bedouin Shepherd B, Jordan Valley)*

Photo C: Water tanker in the Jordan Valley



This account from a Bedouin shepherd also illustrates the importance of land as a '*symbolic capital*' (a term employed by Mehta, 2005: 125). Farmers who practice irrigated agriculture, can make claims for water in relation to the area of cultivated land they own and according to historical allocations of water that their fathers and grandfathers were given. Consequently, when NGOs work with village councils, farmers or irrigation committees, existing power relations are reinforced and the meanings ascribed to water in irrigated agriculture are prioritised.

There appears to be a need for NGOs to understand how water is governed and managed locally by different water users and sectors, as interventions are not solely technical issues and conflict does arise due to the way in which water use embodies existing power relations.

#### **4.5 Place dependence and activity**

*"We use water for our life ... We need more water".* (Head of the Bedouin settlement, Jordan Valley)

Empirical research relating to sense of place and natural resource management have defined place dependence as the needs met, or the activities that people engage in to meet their needs in a certain setting (Kudryautsev *et al.*, 2012, Smaldone *et al.*, 2005). However, a more dynamic and broader understanding of place dependence emerged from local narratives about place and water in both the case study village and Bedouin settlement. The needs that local people identify themselves and the ideas and practices that they describe, are closely connected to the development of social identities as well as an understanding of what it means to be a member of a group (a shared history and heritage). Although it has been useful to discuss the different categories of sense of place and water in relation to the meaning-based framework, they are all deeply interrelated. Therefore the construction of social identities and traditions is discussed in relation to the symbolic in section 4.3, but also functions as a result of relationships and in the development of place dependence and the valued activities that water serves.

When the Head of the Bedouin settlement asserts "*we use water for our life*" and a female resident claims that "*everything is in the land*", water and place become symbolic of a certain way of being, of the activities they engage in, their experiences, memories and relationships, all of which affirm certain social identities. Such a dynamic understanding of water and place is described by Manzo (2005: 82) who terms the phrase '*being-in-the-world*' as a way to understand people's relationship with place through their everyday lived experiences. Manzo (2005) envisages a process whereby social identities also shape how people come to understand their experiences and lives as well as how to be in the world. Water-related acts and needs can therefore only be understood in relation to social, cultural, political and environmental processes within



the historical context. This is not to neglect the importance of livelihoods to local people in terms of material assets but rather an attempt to understand the meanings that shape aspirations and local priorities for water resources. In other contexts, environment and society can co-evolve in a complex and unplanned way. However, in the context of the OPT, this process is constrained, not only due to the environmental limits, but because, even well-meaning interventions can have the effect of fixing existing power relations.

Mehta (2000) argues that NGOs who are active in water interventions can learn from local people's coping strategies over time. These coping strategies can help to understand decision making processes and priorities in relation to multiple social identities. Gender may help to explain some of the differences that were observed in the narratives of place, water needs and activity between the two case studies, as the researcher was not permitted to speak to the women in the Bedouin settlement so the accounts are told by male Bedouin shepherds. Conversely, the female resident in the village who was initially interviewed, acted as a gatekeeper to the women's committee meetings where the researcher was able to speak to women without the presence of men. Here, the women asserted their priority for drinking water in addition to water for cooking and cleaning, as they are responsible for these daily tasks within the household. Decisions are made based on exigencies and an assessment of the amount of water that is available from different sources:

*"... their income is very low so they spend most of it on water. They cannot cook, they cannot clean their clothes, they cannot have a shower, plant - as you can see there is nothing around the house". (Representative B of the case study NGO)*

*"This woman says she has a small cistern and tries to use the grey water, watering the plants. I don't use nanna [mint] I use other plants to save water". (Discussion with the Women's Committee, southern Hebron hills)*

The women describe multiple coping strategies to conserve water; reducing the amount of water used to clean the home, reusing the same water for several tasks, washing less frequently, reusing grey water for the garden and planting rain-fed crops only. People's everyday lives are connected to water, through such roles and responsibilities, whether providing drinking water and food for the household, employing irrigated agriculture or rearing livestock. Some of the residents in the village and the Bedouin shepherds were compelled to reduce the number of livestock or to sell all their animals. Water shortages also limit the amount of food that women can grow for the household in the area around their home:

*"I plant lemon trees, tomatoes and mint but they die as I have no water to give them. Without water, everything dies. Water is life". (Female resident in the southern Hebron hills)*

The women reported experiencing constant stress and anxiety while attempting to manage insufficient amounts of water and from the unpredictability involved in accessing water from tankers, in terms of the intervening period of time between deliveries, (this has varied from one to four months) and receiving emergency water relief from NGOs. Local people have to cope with variability in rainfall but discussed the risk and uncertainty involved in the process of trying to obtain water from private vendors, NGOs or the Government and the lack of agency and choice. The Bedouin shepherds in particular, found the provision of emergency water tankers from NGOs problematic due to their daily movements and the temporal dimension to water shortages:

*"When we get free water from the NGO (one tank), it is difficult to manage the period between the tank and another tank. I am always thinking when will the water be delivered as we don't know. You have to be in this place to get water but I am not always here. I am in the mountains with my sheep. No one asks when it is a good time to come. I want to ask for water directly. When I receive the services I should be able to arrange the time when I need it". (Bedouin Shepherd A, Jordan Valley)*

*"We are thankful to NGOs for this water but it does not come in the most hot months when we need it more. After October water is not such a issue but this is when they bring it". (Bedouin Shepherd A, Jordan Valley)*

Local people are denied the agency they perceive as necessary to adapt their lives and livelihoods to cope with water shortages and to negotiate intervention outcomes in relation to their priorities:

*"We would like a filling point from the settlement pipes that runs along our land. I don't want it for free put a water meter on it and I will pay. It will make my life so different. I could then plant olive tree and lemon tree to create shadows for me to sit in and for my animals. I could change this land so it is not just soil and plastic (referring to the sheeting that makes the walls of their homes). I could make a concrete floor and have a shower. I could change a lot if I had water". (Bedouin Shepherd A, Jordan Valley)*

With increasing levels of poverty in these rural communities (Bashir and Talhamy, 2006), economic constraints further restrict local people's ability to meet their basic needs. There are further implications for intra-household relations as economic assets and resources have become a determinant of women's decision making and bargaining power in the household. It is feasible that NGOs could support women in the negotiation of their needs. The women from the village clearly articulated their aspirations for widening the outcomes of water interventions, or rather linking them to other programmes to support livelihood strategies. In contrast to the compartmentalisation of their lives by some external organisations, the women expressed their ideas for household production activities, including bread production, beekeeping and rearing livestock alongside other responsibilities. These activities



emphasised collective ways of working, (the social dimensions of livelihoods) and connections to past activities and identities:

*"We want an oven to make bread production. This is a special case of our village as their history".*

*"The priority number one is the water. Secondly livelihood support like cows, goats and sheep and chickens. This is for family expenditure for income...income generating projects [everyone nods]. Both types of projects together".*

*"If we can plant, and have a home garden then I can sell the product at the market and bring money to improve our life, but I cannot plant as there is no water for drinking".* (Discussion with the Women's Committee, southern Hebron hills)

These narratives emphasise activities that utilise local skills and local connections, reflecting the residents' concern with how they can move beyond a situation in which they are merely recipients of emergency relief. Returning to collective ideas of self as autonomous and resilient, there is a need to consider and further explore local understandings of sustainability that was conveyed in relation to the affordability of water, its accessibility and the risks associated with different water sources as well as intergenerational rights to local water sources. Local narratives also need to be understood within the local political context as this emphasis on self-sufficiency and autonomy has been fuelled by the perceived weakness or absence of a national Government:

*"We went to the Government and the International NGOs but from the Government, nothing. Lots of promises and little has happened".* (Discussion with the Women's Committee, southern Hebron hills)

*'... our national efforts to maintain ourselves economically in Palestine relied essentially upon the individual ... Very occasionally these people were supported by something more than their own efforts'* (Said, 1986: 96)

As a result of the Oslo Accords (1993/1995), which provided the legal framework for water use and management within the Occupied Palestinian Territories, the Palestinian Water Authority (PWA) is argued by some commentators to remain financially and politically constrained (e.g. Cahill-Ripley, 2011). Zeitoun (2007: 113) states that the PWA only controls seven per cent of the water resources in the West Bank due to the power asymmetries between the Occupied Palestinian Territories and Israel:

*"Our future was lost in Oslo".* (Representative B of the case study NGO)

However, Zeitoun (2007) recognises that internal divisions and the weak regulatory role of the PWA also contribute to water issues. This was reflected in a comment by a member of an International NGO, working in the area of water policy in the Occupied Palestinian Territories:

*"The Palestinian Water Authority talks about the water issue as an issue of the occupation but the poor management of the water resources ... is a big issue".*  
(Representative H of an International NGO and advisory to the PWA)

The PWA maintains its objective to expand the water and wastewater network, which now covers over 88 per cent of the population in the West Bank. Water supply is managed by the West Bank Water Department who are responsible for water distribution to utilities, municipalities and villages. However, access varies considerably throughout the West Bank and even those villages and towns that are connected to the water network, experience interruptions in supply.

#### **Field diary - 29th August 2013**

*The engineer wants to show me the water meters that those villages which are connected to the water network have. We look at the water meter for one household which received 18m<sup>3</sup> in the last five months. The woman tells me that they have water from the tap for around 30 minutes every three weeks or so, "It doesn't even fill our water tank". The engineer turns to me, "you see, they have the infrastructure but it means nothing".*

Despite an awareness of the issues with the water network, the village residents have requested this form of water provision from the PWA:

*"They expect little water to flow in the pipes, but they hope for more water and even a little will reduce their suffering. They see the adjacent village are all asking for water from tankers although they have piped network....We know that in the next community the pipes has water only once every five months for limited number of hours".* (Discussion with the Women's Committee, southern Hebron hills)

#### **4.6 Nature**

*"... the wider Palestinian life before 30 or 40 years. They were living in this harmony with the environment and they be close to nature, they be part of nature, trees around, vegetables around, each one, he plant around his house, tomato, cucumber and the seasons, the fruit trees around their houses ... they work with nature, they respect nature and nature respect them and give them back fruit and vegetables and others".* (Representative F of a Palestinian Environmental NGO)

Nature is valued in multiple ways according to people's perspectives, beliefs and social practices. Local people talked of 'nature as provider' in their narratives, receiving water from springs and sustaining village life from the productive land, (this depended on a claimed equity within communities). For some, the idea of 'nature as provider' is shaped by their religious beliefs. The land and water are believed to be God given and so occurrences, such as a village spring running dry, can be attributed to God's will:

**Field diary - 17th August 2013**

*I spent the morning with a lady from the church committee on her land at the edge of the village. She spoke to me about the expense of water and her need for a source of water on her land. It is too costly to buy water from the tankers each week to cultivate all of her land - 'There is not enough water for all my trees'....On the way back to her family home, she wanted to take me to the ancient spring in the village centre. We descend down some old steps to where I am told that water once flowed out of the ground. The spring is now dry - "The spring stopped flowing. We don't know where the water came from or where it went but it is God's will". Her husband recalls coming to the spring to fetch water for his family and carrying it back in a container on his head. He tells me 'it was good water to drink'. There is a strong narrative that water began to go away at some point, that springs began to dry up and there was less rainfall each year.*

Local people who are largely dependent on rainfall harvesting ascribed the frequent lack of rainfall to environmental change beyond the expected seasonality and temporal variations in rainfall. Society's relationship with the environment is characterised by uncertainty but local people's experiences of this uncertainty is differentiated. Rainwater harvesting in these more marginalised communities, is now associated with greater uncertainty and risk as people have experienced shortages of potable water during the summer months due to lower rainfall. However, the dominant narrative surrounding water shortages emphasises the political situation and inequalities in access to water between Israelis and Palestinians:

*"Three main water sources springs have been lost by the wall ... An Israeli settlement is not far away from here, one of the settlers who is a big farmer take the spring water of the village and irrigate his animals which are of big numbers and irrigate his land for vegetables ... and for production of the fruits. He install pumps to put the water for a large area. From the occupied springs we see with our own eyes the Israeli settlers irrigating the land which has been confiscated from us". (Female resident in the southern Hebron hills)*

*"Israeli companies are digging wells nearby in Palestinian area for settlements. They could give them a pipe and give us little water too in pipes". (Bedouin Shepherd B, Jordan Valley)*

*"The Israeli dig three wells, big wells, so it (the valley) is dry ... Before the area of farm is little for irrigation. This area is large now and uses all water resources here so the water level comes down and many, many springs are dry". (Head of the Bedouin settlement, Jordan Valley)*

*"Water flows beneath us but we cannot dig wells on our own land. We get water from water tankers about 15km away". (Bedouin Shepherd A, Jordan Valley)*

This dominant political narrative of water shortages can obscure the inequalities expressed between local water users in relation to power asymmetries between farmers and pastoralists that are associated with land ownership. There is a need for NGOs and other development actors to understand the historical context and institutions that governed access to water and water use. For example, how did people negotiate access to water locally before the occupation? Would traditional arrangements have enabled people to adapt to cope with environmental and social changes today, had the occupation not ensued from the conflict in the region?

Over-abstraction of groundwater by settlements and the pollution of groundwater were also identified as causes of water shortages:

*"... the spring is not enough for them all because the spring is used for agriculture and drinking ... for other people. The spring is for irrigation and every farmer has a time from the spring and it make problem between these people who have the sheep to take water and the farmers because he collect more water". (Bedouin Shepherd B, Jordan Valley)*

*"There were many water sources now only one water source and we cannot use water as much as we want as the valley is dry all the other springs are dry. We need more water". (Head of the Bedouin settlement, Jordan Valley)*

*"Wastewater from nearby towns, it is coming here and pollute the water. Before, it was about ten springs. But now all of them but one are dry". (Bedouin Shepherd B, Jordan Valley)*

#### *Nature as nurturer of human fulfilment*

*"We have homes in villages back in Hebron, we have buildings but I can only sit in these homes for 24 hours. After that I cannot. I must be back in the mountain. Without the mountain I cannot live". (Head of the Bedouin settlement, Jordan Valley)*

Attachment to place is expressed here, which could be related to the idea of 'topophilia' or the love of place, (see Stedman and Ingalls, 2014). The Bedouin shepherd describes the importance of the mountain environment to his wellbeing. Individuals believe they are at one with the land, with the soil, and with the water. This dimension to the human-nature relationship has been argued to demonstrate our emotional need to connect with place, (Chengi *et al.*, 2003, Smaldone *et al.*, 2005). The meanings that people attribute to nature, appears to contribute to individuals' sense of what it means to live a meaningful life, grounded within the social and cultural context. Tidball (2014) argues that identifying such positive meaning is a powerful way to cultivate positive emotions during times of crisis.

However, while recognising that conflict and the loss of nature can potentially compel greater engagement with nature, which can act to strengthen attachment to place and place-based identity (Tidball and Krasny, 2014), in the context of the Israeli and Palestinian conflict, power relations play a significant role in place-based meanings and representations of nature. Boast (2012) discusses the symbolism associated with Israel's afforestation activities that involves the planting of pine trees and the creation of nature reserves across Israel and the West Bank. Boast (2012) argues that the conflict in the region also concerns the way in which the land is imagined, which involves altering the appearance of the landscape. As a result, the pine tree has become part of the territorial conflict (also see Braverman, 2009). The concurrent loss of areas of olive groves in the conflict is understood to represent the repudiation of the Palestinian right to a presence on the land as the olive tree symbolises Palestinians' connection to the land.

In response to social, political and environmental changes in the region, Abufarha (2008) documents how the meanings that are associated with the land have evolved over time, so that different features of the landscape (the olive tree, cactus and orange tree), have become symbolic of national identity, resistance and belonging, (also see Braverman, 2009 and McKean Parmenter, 1994). These symbols are argued to interact with memories and narratives to shape understandings of self and place. Returning to the olive tree, Abufarha (2008: 353) discusses how cultural representations of the tree have been deployed as symbols 'of nationalism and attachment to the land' due to the historic presence of the olive tree in the landscape of the West Bank. The olive tree is perceived to connect Palestinians to the lives of past generations and to the continuation of cultural practices that are involved in the planting and care of olive trees and the harvest:

'Palestinian farmers are guided by, and often repeat, the Palestinian proverb Gharasu fa-akalna wa-naghrosu fa-yoekolun (They [past generations] planted so we ate and we plant so they [future generations] eat) ... Hence, the olive tree provides a medium for a transitive reciprocity amongst Palestinians that regenerates people hood fused with its land and past and future generations ... the olive tree is a medium for Palestinians to experience the relationship to the land across time ... uniting people with their land and history'. (Abufarha, 2008: 358)

#### *Nature as teacher*

While knowledge is a significant part of social life and culture, learning needs can also arise from nature (Scott and Gough, 2003). For example, local communities are responsive to temporal and spatial variations in water availability with climate and season. However, the ability of individuals and institutions to respond and adapt to environmental change will be defined by power relations, social and cultural processes.

Knowledge, skills and capacities can be understood in relation to the ecological, social and cultural context within which people live their lives (Mueller Worster and Abrams, 2005). The Bedouin shepherd describes the utility of ecological knowledge which has been transmitted orally from one generation to another. This knowledge shapes understandings about being in the world, shared values, and through these intergenerational relationships, people come to understand their heritage as well as their own agency:

*"When I go through the mountains with our sheep we have everything we need. He says when they have a bad throat they take herbs for the tea and feel better. They know about the herbs in the mountains that are their medicines. We learn this from our mothers and grandmothers". (Bedouin Shepherd A, Jordan Valley)*

*"His grandfather and father lived here and they were raising their livestock. He learned from them and took this for his life and his livelihood". (Bedouin Shepherd A, Jordan Valley)*

*"From my grandfather, father and before my grandfather, this life with sheep we are living and in the future, our sons must keep the sheep and work with the sheep. This is the tradition for us ... Only we understand this life". (Head of the Bedouin settlement, Jordan Valley)*

In a remarkable collection of case studies, edited by Keith G. Tidball and Marianne E. Krasny (2014), titled 'Greening in the Red Zone: Disaster, Resilience and Community Greening', nature is in part, understood through a dynamic process of meaning-making at different scales. Tidball, Weinstein and Krasny (2014), emphasise the importance of local decision-making and action following conflict and natural disasters, although they are interested in how learning can be fostered from multiple types of knowledge, and the role that NGOs and government agencies could take in this process.

The concept of 'greening in the red zone', is developed in reference to, 'post-catastrophe, community-based stewardship of nature, and how these often spontaneous, local stewardship actions serve as a source of social-ecological resilience in the face of such hardship' (Tidball and Krasny, 2014: 3). The degree to which people act out of a conscious attachment to place or affiliation to nature when confronted with conflict, instability and disaster, (termed urgent biophilia by Tidball, 2014: 56), is arguably variable and the authors themselves acknowledge that not all people recognise or act upon this innate motivation. The case studies describe local efforts to improve the environment and to maintain ecosystem services in a wide range of contexts, with subsequent benefits for wellbeing and social relationships. Returning to the local narratives in both Palestinian case studies, they refer to tree planting as a way to improve the local environment:

*"I could ... plant olive tree and lemon tree to create shadows for me to sit in and for my animals. I could change this land so it is not just soil ..."* (Bedouin Shepherd A, Jordan Valley)

*"... if there is water, they can plant all kinds of fruit and vegetables ... and the environment around the home will be better."* (Female resident in the southern Hebron hills)

The Bedouin shepherd asserts the favourable micro-environments that isolated trees in this region create, referring to the amelioration of temperature. The female residents from the women's committee in southern Hebron, have the knowledge to manage a home garden and shared their memories of working on the land and taking surplus produce to the markets. These accounts reveal both ecological and social knowledge but when considered in the context of the wider narrative, we gain an understanding of the ideas or symbolism behind them. For example, as previously discussed, planting in the home garden represents self-sufficiency, dignity and a desire for some future stability. Tidball and Krasny, (2014) argue that such engagement with nature in the context of conflict, can have positive social and psychological effects.

#### *Human-nature relationship and resilience*

Tidball and Krasny (2014: 56), discuss local engagement with nature following conflict and natural disasters as a way of demonstrating resilience due to the potential of greening activities to create opportunities for learning and for building adaptive capacity:

*'Resilience, in broad terms, refers to the ability of humans, communities and larger social-ecological systems to rebound and to reorganise in the face of outside stressors ...'* (Tidball and Krasny (2014: 26)

A strength of this approach, is that it encourages those involved in post-conflict situations to explore the conditions that would enable opportunities to engage with place meanings and to support people to renegotiate or strengthen certain meanings in order to respond adaptively. Such an approach, progresses away from solely need-based assessments and the idea of place dependence. From the research in the West Bank, it is apparent that local people employ multiple coping strategies in an attempt to rebuild certain meanings and to create new meaning in the face of continued conflict. This will have implications for the ways in which NGOs work if they learn from local coping strategies, as the (re)creation of meaning is argued to be central to resilience and sustainability (e.g. Tidball and Krasny, 2014). This will be discussed further in Chapter 6.



#### 4.7 Heritage

*"This land is our grandfathers and their grandfathers ... We love this land". (Bedouin Shepherd A, Jordan Valley)*

The literature review discussed Scruton's (2012) theory of 'Oikophilia' or the 'love and feeling for home' as a collectively experienced attachment to place. Emotional attachment to place is argued to be intrinsic to our experience as humans, an idea which is central to many theories of sense of place (see Davenport and Anderson, 2005; Mueller and Abrams, 2005; Smaldone et al., 2005). For the most part, these conceptualisations of humans' relationship to place, do not portray the struggles that exist between different representations of place, collective memories and meanings (see Manzo, 2005; Mitchell, 2002). As Edward Said (2002: 251) argues:

'... collective memory is not an inert and passive thing, but a field of activity in which past events are selected, reconstructed, maintained, modified, and endowed with political meaning'.

Said (1978, 1985) is concerned with the representation and framing of other cultures and histories, and the effects that reductionist systems of framing can have on discourse and policy. Through a discussion of what Said (1978) terms 'Orientalism', he identifies cultural and political processes that identified 'the Orient' or the East in opposition to Europe or the West. 'Orientalism' is argued to homogenise populations ('Orientals'), and create 'imaginative' geographical distinctions, which Said (1978) discusses in relation to occupations during the nineteenth and twentieth century. 'Orientalism' reminds us that representations involve a struggle over historical and social meanings (Said 1978: 332). Edward Said argues for greater recognition of the complexity of historical experience and the relationship between power and knowledge:

'Orientalism as a form of thought for dealing with the foreign has typically shown the altogether regrettable tendency of any knowledge based on such hard-and-fast distinctions as 'East' and 'West': to channel thought into a West or East compartment. Because this tendency is right at the centre of Orientalist theory, practise, and values found in the West, the sense of Western power over the Orient is taken for granted as having the status of scientific truth'. (Said, 1978: 46)

In relation to Palestine, Said (2002: 250) argues that Palestinians have been denied 'the right to a remembered presence', which has been transformed into a determination to stay on the land and to assert a long-standing heritage. Local narratives from both case studies strongly maintain the importance of past traditions and the preservation of a certain way of life from one generation to another. Interpreted in light of the previous discussion, these narratives function to claim a collective historical presence and a right to a presence on the land today:



*"This is the tradition for us. The grandfather have the sheep and his father and grandfather have the sheep and they now use them from his father. Inside him, there is something that means that he cannot sell the sheep, his son will take the sheep from him and cannot sell them either". (Head of the Bedouin settlement, Jordan Valley)*

Local narratives express a situation of living with the past, (which is continually negotiated and reproduced). The fragmented past and the confinements that are experienced in the present situation seem to debilitate the power of the imagination to create a future:

*"But for the future, we do not know ... we do not know ... We hope our children have a better life". (Bedouin Shepherd B, Jordan Valley)*

**Field diary: Conversation with the father of the host family - 8th August 2013**

*For him, the situation in Palestine has worsened over the last 20 years of occupation and they are losing hope for a better future. He says 'there is no relief' and while the conflict continues there can be no future.*

#### **4.8 Knowledge and adaptation**

Sense of place is said to involve how people know the places where they live (Mueller Worster and Abrams, 2005; Cheng et al., 2003; Basso, 1996a and 1996b). This chapter has discussed the various ways in which relationships are lived with place, whether it is through daily activities, social relations, cultural practices, and ideas about self and others. Mueller Worster and Abrams (2005) argue that knowledge (specifically knowledge of local ecological and social contexts), is an important aspect of this relationship as it contributes to people's ability to live in a place. Learning becomes central to the development of sense of place, which is understood to be facilitated by the environment and by social relationships.

Local people asserted that their way of life involves knowing the land, which encompasses knowledge of the local flora, soil, water sources, rainfall and environmental variability:

**Field diary - 12th August 2013**

*I ask the wife of the leader what water they use if they can no longer use the Spring. "We lost our rights to use the Spring and it is a struggle to grow anything" ... In the past, the women tells me that people settled near to springs so that they could grow food and raise animals but they also held water in the landscape that would have flowed away.*

People adopt a number of strategies; using multiple sources of water in response to the availability of water, harvesting rainfall from roof tops and from the land and

migration; all of which requires continuous decision making and adaptation to survive the dry season. This environmental variability has always influenced local people's way of life, requiring knowledge of run-off patterns, the water needs of different crops, the production of fodder and planning surpluses. While learning needs and meanings change over time in response to environmental, social, political and economic variations, the limits to local resilience must also be recognised. Dwindling groundwater levels, climate change and the political situation are a reality for local people that place constraints on their everyday lives.

The research suggests that knowledge and learning are related to individuals' perceptions of what is meaningful within the local context. Social relationships are also fundamental to knowledge and learning as they affect opportunities for learning as well as how individuals understand their needs and capabilities. For example, female residents who have multiple responsibilities within the household, prioritised water for drinking and domestic needs in addition to training on water treatment due to the prevalence of water-related illness in their families. From the group discussion it emerged that the women have been experimenting with household water treatment, using physical methods such as boiling and settling. However, chemical treatment (chlorination), and filtration were dependent on access to knowledge and resources from NGOs:

*"They [NGOs] bring chlorine she says ... The chlorine was ok but after that we don't have chlorine ... but chlorine does not kill the worms ... The organisations also gave us some training and then they left us and have not come back". (Discussion with the Women's Committee, southern Hebron hills)*

The adaptive coping strategies that women are adopting to treat drinking water and their demands for 'Point of Use' training on filtration technologies, suggests they are aware of water quality issues and some of the causes, (contamination of runoff from animal faeces was discussed as well as pollution from wastewater). Other factors such as safe storage and pollution risk reduction were not discussed. Many of the women from the committee had been introduced to chemical water treatment techniques, using chlorine, while fewer individuals had been supplied with ceramic filters but had not received training. While some filtration technologies such as ceramic filters are a low-cost and simple technology, village residents need to be involved in the assessment of each technological option and discussions about alternatives. Training is also an important part of distribution and again needs to involve residents, (Movik and Mehta, 2009: 11). If local people are systematically excluded from discussions about water quality and evaluations of what works and why, access to water that contributes to health and other valued areas will not be sustainable.

Local and International NGOs have been implementing health education alongside some of the water interventions based on the knowledge that many water-related diseases are aggravated by poor personal and food hygiene (e.g. WHO, 2014).

However, assumptions about people's hygiene practices are implicit in local programmes, enabling simplified narratives to frame the problem-definition and to potentially obscure other linkages and causes of water quality issues and water-related diseases. Data on personal hygiene is collected during a needs-based assessment questionnaire, (one question asks people how many times they wash each week), which fails to identify with people's experience. A quote from a Palestinian worker in an International NGO, captured the reality of the constraints that people are experiencing due to water shortages as opposed to a lack of knowledge about personal hygiene practices:

*"I am not saying that all of these projects are irrelevant but some of them are. Like teaching them about hygiene but the practices of the people are connected to a certain situation and if the situation is still the same, the practices will not change ... People are getting very sensitive and are crying sometimes and they are also finding difficulty to answer". (Palestinian Representative G of an International Humanitarian NGO)*

Local capabilities (what people are effectively able to do), are constrained in part by the political situation, which restricts the resources and options that are available to people as well as their ability to act:

*"We make condition for this water to be enough. Only we use water for cooking and drinking. We don't washing, we don't go to the toilet much. That's it. Only for cooking and drinking". (Bedouin Shepherd B, Jordan Valley)*

Marginalised people in rural areas and particularly in the Jordan Valley, recognise that a relationship of dependency has developed between local people and NGOs:

*"She has to wait for any people to give her money, an organisation to bring a tanker for her because she doesn't have any income. Sometimes the community helps her, her brother or her family. Sometimes there is a meeting between the people here to discuss the water shortage ... and sometimes they call organisations or PWA to bring water for them". (Female resident in the southern Hebron hills)*

The government identifies NGOs in the delivery of water services and as the representatives of communities. This has been supported by the redirection of aid via International NGOs following the periods of conflict and political changes within Palestine:

*"All INGOs had to sign something during the last Intifada. It was an Israeli - American paper saying they should have no relationship with political or activist groups to get funding. National NGOs refuse this and it affected their funding. Part of this start making INGOs implementing projects by themselves and I think that is the beginning why they are involved in such a way in Palestine. In other countries it is not the same, the INGOs and local NGs do not have such arrangements. I think this is why more*

*Palestinians work for INGOs as national NGOs do not have as much funding".*  
(Representative C of the case study NGO)

Local people described the effects of this dependency that in turn indicate wider issues within the NGO sector concerning funding dependency, partnerships with donors and government departments, and the short-term nature of water interventions due to the framing of water shortages as a humanitarian crisis, (these issues will be discussed further in Chapter 5 based on the narratives from NGOs):

*"A lot of NGOs give water to us but it is still not free. We pay for it (100NIS for 10cm<sup>3</sup>). The NGO pays the supplier ... Still the 100NIS is too much for us to pay. We would like a filling point from the settlement pipes that runs along our land. I don't want it for free, put a water meter on it and I will pay".* (Bedouin Shepherd A, Jordan Valley)

*"A lot of International NGOs don't ask us questions. You see the solar panels (they are still standing after the destruction of their homes), projects give us such services but without asking my opinion. I don't care about these services, I only care that I stay here on my land".* (Bedouin Shepherd A, Jordan Valley)

The political context imposes significant constraints on NGO activities and compromises in terms of their rhetoric and interventions. However, the Bedouin shepherd's narrative compels a consideration of how certain approaches to interventions are undermining the ability of individuals and groups to meet their own priorities and how opportunities for local agency and grassroots action can be opened up:

*"All of the different international and local organisations and UN agencies that are working in the area are not providing an alternative for having Palestinians enjoying their rights but in some cases, even the proposed alternatives would fail".* (Palestinian Representative G of an International Humanitarian NGO)

*"Here in the village there is a committee and organisations like Oxfam, first conduct a meeting with the local committee and explain to them about the project and the criteria of the families that will benefit from the project and explain to them all the details of the project and they start to collect the applications of beneficiaries. They come with the project decided but they haven't decided who will benefit. There is application, members of family, if the house headed by man or woman and they evaluate these applications. It benefits some people but not everyone".* (Female resident in the southern Hebron hills)

Different forms of knowledge, such as practical knowledge embodied in coping strategies or technical practices related to livelihoods as well as symbolic cultural practices, are another form of resistance.

**Field diary- 12th August 2013**

*I am accompanied to a village which has featured strongly in the media due to their non-violent resistance to the dispossession of their land and water. We enter the house of one of the leaders of the resistance campaign. We are offered a seat in a large front room where members from the village have already gathered. Resistance is described as a 'duty', "part of the destiny of Palestinians". It is for Palestinians to determine their culture, their beliefs and development. The village leader's wife speaks about the need for women to be liberated and to participate in this process due to the responsibility of women in Palestinian culture for the next generation ... This land and farming is part of their identity and they are calling for their right to the land, to self-determination and to the freedom to live a certain way of life. The leader tells me, "the protest is not just about water, water shortage is just one hardship. It is about all our rights".*

Local people are knowledgeable and capable but this is recognised within the context of socio-political and environmental constraints as well as recognising that knowledge is partial and uncertainties exist (Mehta et al., 2001). If it is acknowledged that all knowledge is situated, Stirling et. al., (2007) argue that everyone who is involved in an intervention or who is affected by it, will have different interests and knowledge of the issues, which will inform decision-making processes and ultimately what is possible. During a field visit to an irrigation project, working with the local farmers committee, it became apparent to the head of the local NGO office and engineer that some farmers were continuing to irrigate their land with wastewater, despite an awareness of the detrimental effects to people's health. In this case, local knowledge did not incorporate longer-term environmental risks, nor the associated economic risks.

Unequal power relations will also be maintained if local participation is limited to a role as 'adopters' of technology and knowledge from NGOs and other organisations. In the case studies, beneficiaries of water interventions were determined through needs assessments and negotiations with village councils and other established user groups (irrigation committees and farmer committees). If more marginalised residents and other user groups do not have the opportunity to articulate their knowledge and priorities, then the intervention will serve the limited interests of those who benefit from framing the problem in a certain way and will again consolidate local power relations. Stirling et al., (2007: 25) argue:

'At the very least, particular efforts must be made to bring the voices and perspectives of groups disempowered by prevailing social and institutional structures into this deliberation over framing'.

The female residents from the women's committee have engaged with NGOs as it is now perceived by residents as the only way to secure access to what it is they need in order to meet the needs of the household. As a result, they have been able to utilise existing knowledge, skills and cultural repertoires (women traditionally have a role in household production), to engage in collective action:

*"... if I have sheep and goats linked to other projects then she can produce milk cheese ... and sell and live from the income returns. So we have independence in the homes ... Chicken farms as a group ... They say chicken production will succeed as a group. They already have bees as a group ... They say for seven months, a group project for honey production from the Food and Agricultural Organisation ... in June we cut the honey, 25kg one box produces in a year. There are 15 women in the project of bees, three teams and each team is supervised by one woman". (Discussion with the Women's Committee, southern Hebron hills)*

#### **4.9 Uncertainty and sustainability**

*"Water is a big problem for the people". (Female resident in the southern Hebron hills)*

The theme of coping with uncertainty strongly emerged from local narratives about water and place and can be related to the dimensions of uncertainty proposed by Mehta *et al.*, (2001); *ecological uncertainties, livelihood uncertainties, knowledge uncertainties, social and political uncertainties*. For example local people have observed falling groundwater levels and changes in local rainfall patterns which affect the availability of water, (*ecological uncertainties*). A Palestinian water engineer proposed the need for research to identify the water needs of the aquifer systems as they do not know the physical availability of water nor the limits to these water systems, (*knowledge uncertainties*). These uncertainties lead to uncertainties in the amount of fodder and crops for livelihood activities (*livelihood uncertainties*), and affect households' resources, health and wellbeing. People wait anxiously for water tankers from NGOs or private vendors that have become a permanent feature of water provision. These can be delayed by road closures or missed altogether if people lack access to transport or information about the timings of deliveries, (*social and political uncertainties*). Local people are also unable to store water in cases where tanks and cisterns are damaged (see EWASH, 2012: 16):

*"This place, they cannot destroy because it is in Area B. They use this place for children and for family because it is near to the school but for the sheep it is not good. The sheep now are in another area, in Area C and it is far from them and also the places for the sheep are not safe as the Israeli come every month and destroy this". (Head of the Bedouin settlement, Jordan Valley)*

In an attempt to understand the uncertainties that are inherent in these dimensions of people's everyday lives, it became apparent that there were implications for the sustainability of water access and use. Sustainability has subsequently been incorporated into the meaning-based framework in Figure 4.1. The additions to the framework are shown in bold.

The social and political context of water shortages experienced by the residents of the village and Bedouin settlement, has shaped NGOs' understandings as well as local people's understandings of water availability. This has implications for the technologies that are being implemented during interventions, which are focusing on rainwater harvesting, cistern rehabilitation and grey water reuse (as opposed to the construction of wells or pipes for example). Rainfall variability and longer-term changes as a result of climate change, will undoubtedly affect the use of these technologies and the services that people value from water. Symbolic practices also affect the adoption and use of technology. In many Palestinian communities, religious practices consider water to have a purifying effect. Grey water is perceived locally to be polluted and so impure. Despite local resistance to grey water reuse, centralised systems are being funded by donors to serve large populations, while a number of NGOs have been involved in the introduction of small scale technologies to communities for grey water reuse:

*"Pure water is essential to the Islamic religion here. Black wastewater cannot be touched as it is seen as impure. Water is central to religious practices as people must clean and prepare themselves for prayer. This is something that should be understood by the donor ... The international NGOs and donors did not consider the culture and face many problems about the reuse of wastewater. It is not the fault of the people locally, it is the fault of the people who are applying the technology for not considering the perspectives and culture of the people'. So much wastewater has been treated but has not been used and just goes into the valley because of this. It could be used to develop agricultural activities. In Palestine, you need to separate wastewater into black water and grey water". (Representative E of a Palestinian Development NGO )*

The short-term nature of 'emergency water relief', which focuses on meeting the basic needs of local people, compounds the uncertainty that people are experiencing:

*"They worry about the water all of the time, especially in the summer...Now, the water is finished and she is thinking from where and how will she bring water. She has two problems, the first is that she does not have any money and from where will she bring the tank as it needs a long time to come". (Female resident in the southern Hebron hills)*

Mehta *et al.*, (2007: 15) argue for sustainable water and sanitation systems that consider the uncertainties and complex social, technical and ecological processes in the local context. In their framework, they encourage a focus on the sustainability goals of poorer, more marginalised groups. The sustainability of water and sanitation systems is defined as:

*'... the extent to which water and sanitation access enables people, communities and regions to develop the personal, social and economic dimensions of their livelihoods and uses of water and sanitation (on top of their basic needs for water for survival), in a way that is resilient and robust over time and in the face of shocks and stresses'.*



Sustainable water provision is understood locally in various ways. It has been incorporated into the meaning-based framework because it emerged strongly during the fieldwork. In particular, the need to explore the factors that contribute to sustainable water delivery became apparent, particularly in light of the negative coping strategies that were observed in local communities as to response to emergency water interventions. This research supports arguments that endorse water systems that sustain a diversity of activities over time, and as Mehta *et al.*, (2007) argue above, that can maintain functionality in the longer- term even in the face of change. This requires the capacity to not only cope with change but to respond and adapt to it, in order to sustain the valued services that water provides local communities, which are essential to their way of life. Sustainability is therefore considered to be fundamental to all the categories of water and sense of place in the meaning-based framework, from sustainable livelihoods that are based on diversity, to social relationships and the ability of social institutions to mediate change.

Mehta *et al.*, (2007) argue that water systems must be sustainable in ways that are understood by, and are meaningful to poorer and marginalised groups. In this chapter, local narratives discussed multiple sources of water that people were able to access freely in the past which enabled them to have diverse livelihoods and a valued way of life. Traditional local governance arrangements were also argued to safeguard communal water sources from over-abstraction and ensure the equitable distribution of water. Equity is an important social dimension of sustainability in the local context and is understood in relation to the provision of water for future generations and the realisation of their water rights. Therefore, any concept of sustainability needs to encompass both social and economic dimensions, as recognised in the work of Mehta *et al.*, (2007). Although the sustainability of water provision and use were not widely discussed in terms of ecosystem health, accounts of the over-abstraction of ground water were discussed by all of the Bedouin shepherds, which raised questions around water resource protection. Therefore, the environmental dimension of sustainability has been incorporated into the meaning-based framework in Figure 4.1, together with the social and economic dimensions.

In addition to supporting sustainable livelihoods, sustainable water provision is locally understood to be fundamental to the health of the household and to their resilience over time. These are considered essential for relieving poverty, increasing agency and maintaining self-sufficiency. Due to the relationship between the sustainable provision of water and use; diversity, agency and resilience are identified as sub-themes of sustainability in the meaning-based framework in Figure 4.1. As with sustainability, agency and resilience, there are interconnections between all the categories of meaning.

As elaborated elsewhere in this chapter, resourcefulness and resilience are values defined locally by ideologies and cultural beliefs about Palestinian history and identity. These understandings strengthen the need for a level of participation and greater



agency in sustainability. From the typology of water interventions introduced in Chapter 2, interventions characterised by deliberative participation and learning are argued to contribute to sustainability and will be discussed in Chapter 6:

'There is a growing evidence that when intense community mobilisation allows local people to play a key role in project design and execution, sustainability is enhanced and there is an incentive to make systems more resilient'. (Mehta *et al.*, 2007: 14)

Figure 4.1 Revised meaning-based framework

Water as ...	Sense of Place as ...
	The Symbolic <i>life / gift / sustenance</i>
	Relationships <i>belonging / attachment / power</i>
	Identity <i>self / collective / imagined</i>
	Place Dependence <i>Security / social practices / economics</i>
	Activity <i>production / livelihood activities / income and assets / education and skills</i>
	Nature <i>nurturer of human fulfilment / natural capital / conservation / conflict / teacher</i>
	Heritage <i>shared histories / inheritance / stewardship / responsibilities</i>
	Knowledge and adaptation <i>technology / informal and formal systems / ecological and social knowledge / knowledge sharing / participation / local innovation</i>
	Uncertainty <i>dynamic processes and systems / spatial and temporal variability / location of water as an input and as an output</i>
	<b>Sustainability</b> <b>societal, environmental &amp; economic / diversity / agency / resilience</b>

## **Chapter 5: (Re)presentations of Place and Water**

### **5.0 Introduction**

The intractable political situation in the region and the involvement of state, international and local stakeholders in the water sector, has resulted in multiple narratives about water and place, based on often conflicting interests and understandings. This chapter will explore how these narratives manifest in water interventions and policy in this context, focusing on the accounts of members of local and international NGOs, government officials and documentary sources. Opportunities for local participation and learning by all stakeholders vary within community-based water interventions that follow these narratives, with implications for sustainability. Local NGOs recognise that learning and participation are limited in most interventions to 'instrumental participation' (i.e. participation to achieve specific goals such as an increase in the quantity of water supplied to households). Without supporting local meanings and local agency, the provision of water is often not sustainable.

Multiple narratives about water and place coexist in the context of the Palestinian-Israeli conflict, a conflict that has arguably received considerable attention from a wide range of disciplines. While this research recognises the influence of discourse and the creation of meaning in the context of this political conflict, it focuses on the consequences of the development of dominant water narratives at the level of community-based water interventions, which present and re-present certain problem-definitions.

Following a brief overview of some of these narratives in the OPT, specifically the 'poor water management narrative' and the 'water rights narrative', this chapter will focus on the prevailing narrative of 'water shortages as a humanitarian crisis'. This narrative is examined using the meaning-based framework, in relation to the categories of; knowledge and uncertainty, social relationships, identity and activity, and the symbolic and nature. Comparisons will be drawn with the analysis of local accounts about water and representations of place-based meanings in order to identify any disjuncture with local realities and to later explore the learning processes by which NGOs and other stakeholders can engage with multiple understandings and perspectives for more sustainable water provision.

As mentioned above, the meaning-based framework is employed to reconnect prevailing water narratives with local people's own accounts about water and place, in relation to the research aim 'to compare local experiences and understandings of water issues in the OPT with dominant models that are applied by international donors and global perspectives of water shortages'. This comparison also provides opportunities to further explore NGO engagement with local meanings. The meaning-based framework that has been developed in this research, explores the meanings that

are given to water and how these shape understandings of water issues. The framework acknowledges that the multiple dimensions of water and place are connected and are inseparable from socio-political, economic and environmental processes. These processes are regarded as interdependent and contextually contingent. For example, cultural beliefs, norms and values inform meaning-making and social practices, which interact dynamically with water systems, whether on the properties of water or water quality. For the purposes of the research, environmental processes are understood to encompass both hydrological and ecological processes that operate over different temporal and spatial scales.

Insights are also be applied from the 'pathway approach', which has been developed by the STEPS Centre, to further understand the process and consequences of framing for water policy and interventions in the context of the research. The pathway approach proposes a framework to understand decision-making and planning processes in policy development and programming, with an emphasis on the role of different forms of knowledge. It understands knowledge to be inseparable from power and social relations, while also shaped by socio-political, economic and environmental processes (Leach *et al.*, 2010 and Leach *et al.*, 2007).

In relation to systems thinking, the STEPS Centre pathway approach recognises that water systems are highly dynamic and complex due to the interaction of socio-political, economic and environmental processes at multiple geographic and temporal scales, and the involvement of multiple stakeholders (Leach *et al.*, 2007). The assumptions, interests, priorities and values of these stakeholders, are understood to shape how a problem is represented and the subsequent trajectory that decision-making processes and interventions follow. This systems perspective acknowledges '... that systems must be seen as simultaneously objective (involving structures, functions and their interactions, existing in a context) and subjective (reflecting different framings of the system, its functions and outcomes and its contexts)' (Leach *et al.*, 2007: 7). It follows that decision-making must acknowledge diverse interests and priorities, as well as trade-offs. For example, the Palestinian Authority defines water shortages in the context of under-development and poverty as a result of the constraints of the occupation, which underlies government proposals to create new sources of supply with large scale infrastructure in the form of a water desalinisation plant in Gaza and large wastewater treatment plants across the West Bank. This account fails to engage with some concerns around specific religious and cultural beliefs about water purity that are often argued to discourage local people from reusing wastewater, as well as existing local coping strategies and local NGOs' concerns about the unsustainability of water desalinisation (in terms of the high cost of water treatment and maintenance). However, it is important to relate the government's discourse around water shortages to the political context of the OPT. The Palestinian Authority is obliged to cooperate with donor policies and relations due to its dependency on aid and international support for multilateral engagement in the peace process, (following the Oslo Accords

and the more recent Quartet's Roadmap for Peace) (Selby, 2013; Cahill-Ripley, 2011). Zeitoun (2008) argues that this fundamentally requires the Palestinian Authority to cooperate with Israeli discourse, which promotes the creation of 'new water supply' to meet the domestic demand in Gaza and the West Bank rather than pursuing options for the re-allocation of groundwater and surface water.

The example of the technology proposed for water desalination and wastewater reuse also helps to illustrate how dominant narratives emphasise certain solutions that benefit the political and economic interests of more powerful actors. As a result, local priorities in the West Bank are subordinated, and local social and cultural meanings are interpreted as barriers to the adoption of new technologies that information or communication learning strategies are then often designed to overcome:

*"Wastewater is also a huge problem. The issue of reuse has such potential, especially for agriculture, but there are lots of issues. The farmers need to be sensitised. There are cultural issues but what the farmers don't realise is that they are already reusing water".* (Representative H of an International NGO and advisory to the PWA)

NGOs in Palestine are being encouraged by the Palestinian Water Authority (PWA) and the Ministry of Environmental Affairs (MEnA), to support *"environmental education and awareness raising campaigns"* that emphasise the benefits and safety of water reuse, (Government Official A from MEnA). However, without the considerable negotiation of meanings, these strategies employed by NGOs and state organisations could be problematic:

*"So much wastewater has been treated but has not been used and just goes into the valley because of this. It could be used to develop agricultural activities. In Palestine, you need to separate wastewater into black water and grey water ... If this distinction is made, than people know that they can use grey water in the home garden".* (Representative E of a Palestinian Development NGO )

### **5.1 'Water shortages and poor water management'**

The internal struggle over water and meaning in the OPT, is obscured by the international discourse around the poor capacity of the Palestinian Authority to control and distribute water resources across the West Bank and to fulfil its obligations to the Oslo Accords. According to this discourse, water shortages result from poor water management in the West Bank, which requires the PWA to adopt a centralised approach to regulation according to global governance models.

Palestinian NGOs emphasise the PWA's struggle for legitimacy in the context of political processes that have resulted in inequitable water distribution in the region. However, international NGOs, bilateral and multilateral donors argue that domestic regulations and public investments have been insufficient to address water supply and

delivery as well as related environmental issues. The contrast between these two representations of the water problem in Palestine are evident in the following extracts:

*'The government of Israel has placed severe limitations on the ability of the Palestinian Authority to develop the WASH sector in line with national priorities. Palestinians have been unable to build large scale infrastructure that would secure supply of adequate services to the population and insufficient water allocations have obstructed economic development ... Lack of long-term sustainable solutions have increased Palestinian dependence on aid and the costs to donors, contributing to the perpetuation of the existing crisis'. (EWASH, 2012: 7)*

*"Palestinians are sometimes blaming too easily it is all the occupation, we don't have water ... which is true in a sense of course, because the occupation are controlling the biggest part ... but also there are many issues in the Palestinian water sector itself and within the water service providers. For example, in fees collection, it doesn't depend on the occupation for you as a service provider to make people pay the water bills. So there are many internal organisational challenges which would also improve the water availability for people ... we are not doing anything to do with infrastructure, it is more about capacity development". (Representative H of an International NGO and advisory to the PWA)*

The international community plays an important role in formulating the discourse around the weak governance of the water sector in the OPT as well as the physical parameters of interventions. Donors demand that the Palestinian Authority take greater responsibility for the governance of the West Bank, but as mentioned, the Palestinian Authority has become reliant on donor organisations and financial aid to fulfil basic aspects of this. The 'poor water management' narrative has been employed to suggest the importance of policy reform and institutional reform in the PWA and legitimises the role of international NGOs and donors in this process:

*"The clustering and reform is the main part of the strategy ... There are certain things that the PWA see as out of their control as it depends mainly on decisions by Israel but they have the Joint Water Committee Unit which we support in strengthening the Palestinian side but also they see there is a need to better manage the available water that exists". (Representative H of an International NGO and advisory to the PWA)*

These observations can be linked to arguments made by Zeitoun (2008), who discusses the existence of a 'cooperation discourse' that emphasises the role of water and the international donor community in development. International discourse has reframed the water problem as one of governance (e.g. relating to domestic law) and infrastructure, which legitimises the Palestinian state's responsibility for demand management in the West Bank and the obligation of the international community to support the Joint Israeli and Palestinian Water Committee:

'Donors' use of development funds to advance their own political goals is well documented in the literature of development studies and international development agencies, and donor- driven agendas are particularly evident in the politically charged world of donor assistance for Palestinians'. (Zeitoun, 2008: 80-81)

This touches upon arguments made by Whitfield (2009) and others (e.g. Gibson *et al.*, 2005), who attribute cases of poor or inappropriate implementation of policy to aid relationships and policy processes which ignore the history of those relationships and the historical trajectory of socio-political, cultural, economic and environmental processes in specific national contexts. Whitfield (2009: 14) argues that these factors influence recipient countries' choices in relation to policy options, with consequences for ownership (and accountability), democracy, and the negotiation of local problems and solutions:

'Ownership understood from the perspective of sovereignty thus means allowing space for domestic processes: for struggles within recipient societies to define the national interest and for recipients to make their own policy choices and to draw their own lessons from their experiences, respecting that their own perceptions of their problems and solutions are legitimate'.

Returning to the example of the 'cooperation discourse' which has been observed in the context of water in the OPT, it suggests the role of donors in the consolidation of certain ideas and problem-definitions which emerge in discourse at the global level. Whitfield (2009), also attributes these narratives to donor accountability to their own national governments. As a result, donors, partnering NGOs and recipient country professionals, all with specific interests and incentives, are not necessarily accountable for producing sustainable outcomes or for creating sufficient opportunities for the intended beneficiaries to participate in decision-making (e.g. by transferring power or facilitating knowledge exchange and dialogue) (Gibson *et al.*, 2005).

Focusing on the regional context, Selby (2013) contends that the Palestinian Authority has had to adjust its water policies and practices as a result of unequal power relations between Israel and Palestine within the Joint Water Committee regime. Selby (2013: 7) argues that although the Palestinian Authority is responsible for the operation of the water systems serving Palestinian communities, the Joint Water Committee 'effectively grants Israel veto powers over Palestinian water resource and infrastructural development within the West Bank' (also see The World Bank Report, 2009: 34). Although the Palestinian West Bank Water Department continued to maintain and operate local water systems that supplied water to Palestinian villages and towns after 1967, ownership of all water systems supplying both Israeli and Palestinian citizens was transferred to the Israeli water company Mekorot, which controls abstraction rates from the trans-boundary aquifers. The integration of the West Bank water system into



Israel's National Water Supply Network enabled the centralised management of the region's water resources.

However, further research by Selby (2003) recognises that the Oslo water agreement also formalised unequal power relations within the Palestinian Authority, as power was transferred to former members of the Palestinian Liberation Organisation when they were allowed to return to Palestine from Tunis. Despite the establishment of the PWA, Selby (2003) argues that Palestinian municipalities, village councils and their elites, continue to play a role in the maintenance and operation of local water networks. As a result, control over local water supplies largely remains within these local institutions. This fragmentation and de facto ownership of water by municipalities and village councils has undermined the legitimacy of the PWA and is argued by the World Bank (2009) to deter donor involvement and finance. According to the World Bank (2009) report, donors are demanding reform of the PWA and water sector so that the PWA gains a strong presence as a regulator of regional utility groups. They argue that there is currently no coordination between several hundred utility companies that are not financially viable. However, while there is much the PWA can do to reform the water sector, the World Bank report emphasises the constraints that the Joint Water Committee governance regime places on the development of water resources in the region, and recognises that the Israeli Civil Administration and Mekorat control the majority of the water resources in the West Bank.

## **5.2 'Water shortages and the denial of Palestinian water rights'**

Palestinian civil society is increasingly challenging the singular discourse of cooperation and better water management and insisting instead that Palestinian water rights are simply being subverted. In particular, many Palestinians identify the Oslo process and the formation of the Joint Water Committee as the result of the power imbalance between Israel and Palestine. Cahill- Ripley (2011) argues that the lack of substantive content in the Oslo Accords, and the deferred negotiation of the water rights of Palestinians, has enabled Israel to further its political interests in relation to the control of shared water resources. Water therefore continues to be integral to the political processes in the region:

'Overall, the Oslo Accords offer little by way of human rights guarantees and although they do detail interim measures to be undertaken regarding water, the critical questions concerning ownership and control have been assigned to the permanent status negotiations, resulting in a 'freeze' on Palestinian water rights according to this agreement. The combination of a 'freeze' upon the water rights of the Palestinians and the maintenance of the status quo regarding water use and management between Israel and the OPT has resulted in further deterioration of the water crisis since the advent of Oslo period to the present situation'. (Cahill-Ripley 2011: 119)

Water has become symbolic of the occupation and vast inequalities in the region (Zeitoun, 2008), but the language of human rights evades both narratives of cooperation, water management and the humanitarian crisis. Zeitoun (2008: 41) attributes this to the process whereby contrarian ideas and understandings interact and co-evolve until any contradictions between them are marginalised and a 'coalition of discourses' are produced around the dominant perspective. Alternative understandings of water shortages in Palestine are concerned with the application of the human right to water in the OPT and the diplomatic support of the donor community for Palestinian rights and self-determination:

*"We realised that the community has humanitarian symptoms of a political problem".*  
(Palestinian Representative G of an International Humanitarian NGO)

*"The main problem is still the same, the shortage of natural resources, because Israel control on the natural resources ...".* (Government Official A from MEnA )

*'... Palestinian water rights have yet to be defined'. (Document 1: 52)*

NGO representatives acknowledge that water scarcity is framed and presented differently, according to the audience or potential partnership that it is engaging with, for example international donors or national organisations:

*"I feel sorry for NGOs as they are afraid to tell the truth ... They think that if they say to the donor, we have a special culture here, that the international community will judge Palestinians and won't work with us. They don't tell the truth because of this. They are worried about talking about culture and religion due to the perceptions of Islam and terrorism. So they ask the donor, what do you want to do and they secure the funding".* (Representative E of a Palestinian Development NGO)

*"In the water sector, there are a lot of mistakes being made by NGOs, famous NGOs ... who want the funding, so they market the donor's point of view. Unfortunately this means that there are a lot of water programmes applied in Palestine that are not successful and make problems in the community because of it".* (Representative E of a Palestinian Development NGO)

Palestinian NGOs risk alienating themselves from the international donor community if they do not frame water issues in a way that responds to the prevailing discourse. The prevailing discourse around the cooperation over water is influenced by the discourse of water security, in which water is seen to be pivotal to the peace process. These discourses reproduce governance frameworks that centralise water resource management and understand the place of NGO activities as part of the development of the water sector. As a result of this understanding, it is recommended that NGOs should align their activities with national policy (e.g. The World Bank, 2009). This constrains dialogue and deliberation around alternative perceptions and understandings

of water scarcity in the OPT and reduces the range of possible solutions to local water shortages.

Despite these prescriptions that have been shaping water institutions in Palestine and local NGO practice, some NGOs have recourse to human rights provisions concerning the Palestinian right to water and international obligations. The importance of water has now gained international recognition and Palestinian NGOs hope that 'water as a human right' will, in time, enter the global discourse:

*"We are trying to apply for some things that are infrastructure but our donors ... they don't want to fund infrastructure projects, they want emergency only. It is based on what the donor want. Now all donors are humanitarian aid. Give us our access to our groundwater. Give us our water rights! The Palestinian citizen feel this. This is why I tell you the international funding is trying only to alleviate what the Israelis are applying on the ground". (Representative A of the case study NGO )*

### **5.3 'Water shortages as a humanitarian crisis'**

"The key goal of most agencies involved in EWASH is to provide potable water at affordable prices, essentially to fill the humanitarian gap left between the responsibility of the occupying power and the capability of the civil powers to meet the needs of the population". (Graves, 2007: 439)

This above quote illustrates the tendency of much discourse to define water interventions, exclusively or predominantly, as responses to humanitarian crises. Such definition predisposes certain kinds of intervention and inhibits others. The dominance of this narrative obscures the diversity of problem-definitions and has implications for both learning and sustainability.

While narratives can coexist, Zeitoun (2008) argues that relations of power will determine their influence, for example, whether a narrative becomes part of a national agenda or whether it is recognised internationally by NGOs and their donors. Members of local NGOs involved in the water sector in Palestine (including environmental and development NGOs), maintain that emergency water relief is the dominant form of intervention in both Gaza and the West Bank as a result of representations of water shortages as a humanitarian crisis:

*"International donors try to help, mostly they try to fund supplying water, this is emergency only but not development programmes or sustainable ... We are trying to apply for some things that are infrastructure but the donors, they don't want to fund infrastructure projects, they want emergency supply only ... Now all donors give only humanitarian aid". (Representative A of the case study NGO)*

*"... most of the projects are emergency projects ...". (Representative B of the case study NGO)*

*"Some are coming to provide services for the Palestinian people but some, we feel are coming with interests to get fund for their survival and we know these. Small projects, small activities and impact and high administration costs. Some say they don't want to work in Area C but some work with us ... in Area C and they understand the conditions here and work in a flexible way in response to these. Before, no, they focus just on the safe projects". (Representative B of the case study NGO)*

The international donor community has become a major stakeholder in Palestine as donor assistance has been so critical to supporting water delivery. International donors are understood to focus on Palestinian domestic water needs as a result of donor-driven goals for development funds. However, Palestinian NGOs in the water sector also recognise the often insurmountable barriers that projects experience on the ground due to Israeli policies that prevent even medium-term development projects:

*'Stakeholders repeatedly expressed their appreciation for donors involvement in this process, and ... appreciate a more active and facilitating role by the donor agency, provided the on-the-ground staff was experienced, able to adjust procedures to constraints in the security context when these emerged, and that there was continuity (not a year-by-year replacement). Yet, they cautioned that some donors were focused on following their own agenda too much without paying sufficient attention to the reality of the Palestinian context'. (Document 4: 78)*

*"Sustainability is important because for many communities, what the humanitarian actors is doing is providing water now - plaster solutions. Providing water tankers, you know. So that solves the problem for this summer, reducing the prices for this summer, but the problem is still there maybe for next year and if any variables change, like the fuel price increase more, they will still be depending on the donor funding and what if there is no donor funding?" (Representative A of the case study NGO)*

Zeitoun (2008: 82) supports the observed association of emergency water programmes with 'donor fatigue':

*'After repeated setbacks, and under sustained pressure from head offices to 'deliver', the locally-based foreign donor agencies end up acquiescing to the status quo'.*

Both the World Bank (2003) and the organisation Amnesty International (2009), have documented the effects of military orders and operations on donor projects, as described in the following accounts from local NGOs:

*"The communities do not have their basic needs met. They don't have latrines. They have to use caves or in open air, or behind the stone, you see. This is not good for the*

women so we have also thought about how to provide them with a sanitary latrine and not to be subjected to confiscation or demolition. So, some they thought if it is not fixed by concrete it is ok. So we thought about that, and we constructed the walls, the ceiling within 10 minutes but again they came and took them down. It is a political issue, a strategy for them". (Representative B of the case study NGO)

"Humanitarian workers also have restrictions on their work, we have an example of a community in the north which was surrounded by the wall, humanitarian actors and resources were not allowed to access this place, including the UN agencies. So last year we had a project there and they need a health clinic, and we were unable to deliver the materials, so we could not fulfil the need of the community". (Palestinian Representative G of an International Humanitarian NGO)

The reports by the World Bank and Amnesty International, detail delays to, and suspensions of water and sanitation projects due to the system of permits required for any water-related project in the West Bank, including the rehabilitation of existing local sources of water. Restricted access to land where springs and cisterns are located and blockades, are also understood to determine recourse to funding short-term projects:

'One of the effects of such restrictions and obstacles is that international donors tend to resort to short-term stop-gap measures such as the delivery of water by water tankers, which is usually far more expensive than delivery through piped water networks. This undermines the need to invest in long-term water and sanitation infrastructure and services for the people of the OPT and the coordinated and effective use of development assistance in support of the Palestinian population's access to such services'. (Amnesty International, 2009: 75)

The discourse relating to humanitarian needs potentially limits the role of NGOs to the provision of water services to meet basic needs, a role that has continued to grow in the absence of government provision, particularly in rural areas of the West Bank. For example, in an early report in 2006, the case study NGO, stated that '*... serving the rural and marginalised communities and farmers by increasing the quantity of available water, whether for drinking or agricultural purposes, is one of its priorities*' (Document 1: 2). Although their objectives now encompass the principles of social and environmental justice, local water supply remains central to the NGO's environmental work. The Palestinian Authority and the international community assume that NGOs function as intermediaries, representing local needs, while facilitating the delivery of project specific outcomes. Research participants from local and international NGOs expressed the difficulties that arise from some partnerships, when the NGO attempts to frame local priorities according to the agendas of its partner organisations:

"Many organisations, based on the decisions of donation bodies led by certain Government or UN agencies or big donor organisations, sometimes make us design

*our needs assessments within a specific framework, like the project is, providing urgent water for these communities, so you are not going to the communities and asking them the simple question of what is your need in relation to that ... Some organisations are more flexible and design the needs assessment better than others, depending on how much the community are involved but usually, it actually make the community think within a specific framework or sometimes there is another issue that isn't in the framework of the programme so it is left out. So it make societies accept projects that they shouldn't accept". (Palestinian Representative G of an International Humanitarian NGO)*

During a visit to a village in the Jordan Valley, I observed the assessment of water needs by a local NGO. The needs assessment is orientated towards understanding water usage at the household level where water consumption is low, in order for the intervention to meet the basic needs of the household. The identification of household needs and resources is based on an understanding that greater access to water assists in alleviating poverty. Individuals' access to, and use of water, is assumed to reflect their prioritisations and concerns. NGOs commonly approach the head of the household and ascertain information about education, employment and income as well as water practices (water sources used, time spent collecting water, expenditure on water), sanitation and hygiene practices. Disability and access to health care are also assessed. Members of local NGOs recognise that local participation is limited due to the framing of water issues as a humanitarian crisis and donors' assumptions about local processes and needs. Few opportunities are given to local people during the appraisal to draw on their own knowledge and practices, which might include how they understand the risk and uncertainty associated with different water sources, the choices that are available to people and the strategies they employ to realise their priorities. The lack of opportunities for the NGO to engage in dialogue with local people and the implications for local ownership, agency and sustainability is illustrated in the accounts below:

*"... we have two planning scenarios, starting from the community and going up or the funding and plan come from the donor and there is a problem with this. Stakeholder involvement should be enhanced. It is a real problem on the ground, and people are not taking huge part in the need assessment step and communities are not involved or asked to verify what their priorities and needs are". (Representative A of the case study NGO)*

*"I told you that people are using negative mechanisms to survive, accumulating debt, poor diet, selling assets. When organisations are giving cash for food, they are maintaining the mechanisms they are using. They are still accumulating debt. They would improve their food consumption and then it gets worse again". (Palestinian Representative G of an International Humanitarian NGO)*



Within the NGO, an expectation of the needs assessment process is that it is participatory. However, where interventions are necessary according to donor or other agendas, the degree of participation can become problematic. The way in which water shortages are framed within the narrative of a humanitarian crisis, results in projects that proceed from predetermined solutions to meet basic water needs. This may be true even if interventions are sensitive to local technology. As the comments from members of NGOs suggest, the process is not necessarily beneficial to participants; but to use the terminology of Sen (1993) non-participation is not perceived as an option where access to water and local people's freedoms are already limited, referring to the expansion of a person or group's ability to pursue and achieve valuable 'beings' and 'doings':

*"You have to understand that as NGOs give money to communities with little financial contribution required from them, they do not make any decisions. When donors first came to Palestine, Palestinian households would each have their own cisterns, built by themselves. But now, because donors come and build cisterns the people have stopped making them themselves. So now you will find in many villages, a lot of houses without cisterns but in the past no house would be built without one ... The communities' decision, is to say yes or no only. They do not have a point of view about what to have and even if they do, the needs assessment or criteria of water interventions relates to donors' objectives. NGOs frame their proposals to relate to the donor, not to the people's needs". (Representative E of a Palestinian Development NGO)*

Despite the discourse of local participation and just intentions to redress inequality and injustice, both observations of the case study NGO-led meetings with residents from villages and the interviews, suggested that the process is shaped by assumptions held about the purpose of participation and how the process is understood. As discussed, the narrative pertaining to local water shortages as a humanitarian crisis, allocates water resources in relation to this issue, via relief interventions that often involve the transfer and adaption of ideas, knowledge and technologies (Gibson *et al.*, 2005). This is also due to a short funding cycle and their accountability to and arguably, their dependence on donors and other partners. The idea of learning as part of the process of participation for all stakeholders is absent as the problem-definition is imposed from the top-down:

*"For a certain project, we go to the community, we ask the community for their water needs because we are working in water. Then we ask them, what is your water situation and make surveying and this we use the water consumption litre per capita per day on the ground ... Then we ask about the source of water, they say, for example, we have 4 months using the water cistern then, for the remainder of the year we purchase vendor water, then we ask about the price of the water and some people say they take water from remote areas agricultural cisterns. Then we ask about the quality and then we see how can we help. But we don't ask them, what are*



*you proposing. We only ask them about their needs and then we plan the action on the ground". (Representative A of the case study NGO)*

Participation is understood in multiple ways according to different interests. The language of empowerment is frequently referred to in both Palestinian and international NGO discourse, based on an assumption that participatory processes empower participants in relation to their rights or their involvement in social and environmental change. For example, the case study NGO, disseminates information on hygiene practices and water conservation through awareness programmes at the level of the village:

*'[The NGO], conducted several workshops ... on water and hygiene issues in the 8 targeted sites ... The main target group was women as they are mostly involved in the water provision in the house and they, mostly, suffering from the shortage of water. Our female social worker visited the families before implementing the project activities during and after ... The aim of the visits related to hygiene is improving the quality of drinking water, improving the hygiene conditions of the family members mainly women, encouraging the positive practices of the family members; washing the hands before and after using the latrines, how to use and maintain the purchased latrine, monitoring the drinking water quality and properly use the purchased filter ... It should be mentioned that, this action was included in the proposal, but as a result of the field visits conducted to the sites, the social worker noticed that the families suffer from the lack of hygiene materials which improve the hygiene conditions of the families either because of the low economical conditions or related to level of awareness towards that'. (Document 5: 7-8)*

The female residents from the case study village in the southern Hebron hills, commented that they had already put into practice what they were able to, but without change to their circumstances (referring to the socio-political, economic and environmental limitations of the context), there had been little sustained improvement in their situation. Participation is often concurrently understood by the NGO and donors to be instrumental in achieving efficient and effective water systems, for example by reducing the costs of interventions and/or water services. During the rehabilitation of agricultural wells, the same NGO requires all local farmers who are participating in the project to sign a memorandum of understanding, which specifies their roles and responsibilities. These include, water resource management (so that water use does not exceed a specified 'safe yield'), the maintenance of equipment and the expansion of irrigated agriculture into previously cultivated areas that had been abandoned in recent years.

During a meeting with a village irrigation committee, the NGO defined participation according to the farmers' collective contribution to the financial costs of the project and the subsequent maintenance of the irrigation system:

*"So the donor ask the NGO to do the same project in this area. The NGO said to the people, we want to do something very similar ... and I need you first to make a committee for the project. It must be the Village Council as part of it and any social or irrigation committees these people they trust. The Director ask them for a letter from the Village Council that this person has been selected by the Village Council and will be responsible in the future. This committee is responsible for choosing the place of the project and how to work on this project and follow it through to completion ... The Director said that people will have to contribute a part to the project that it is from 1-15 per cent. The land is not part of this it is still owned by the farmer so this portion must be as committee contribution and if they don't have it as money it could be as labour". (Representative C of the case study NGO)*

NGOs often emphasise the financial sustainability of the intervention but can overlook the social sustainability of the local institutions that they promote. A representative of the case study NGO gave examples of projects that intervene to improve village irrigation networks, either by constructing an agricultural pool or rehabilitating wells. The international and local NGO introduce new ways of distributing irrigation water and organising water users during the intervention. However, shortly after the NGOs cede the management of the project to the local water users, the project is often abandoned:

*"... what I advise for my projects and others from experience, is to collect the farmers and make discussion with those important stakeholders. We are planning to help you reduce the water losses in your spring for example, and this can be achieved by making some intervention in the spring ... but what are you advising? To hear from them and from there we can plan. But if we move directly [without dialogue], our intervention will be like this, instead of taking water manually, we will pump the water, you will use drip irrigation or sprinkler irrigation and so on, it will not work. None of the projects for rehabilitated springs have been sustainable". (Representative A of the case study NGO)*

Gibson et al., (2005: 131) argue that information flows from the local level to the donor organisation are essential to support learning by all stakeholders about processes that contribute to sustainable outcomes:

*'... incentives for an aid agency's staff to learn about sustainability of field activities is one of the most fundamental factors in that agency's quest for sustainable development outcomes'.*

Local people form a committee as part of the water intervention, to represent and promote local interests and priorities. These committees are often formed of representatives from existing local institutions such as farmer or irrigation committees. The Village Council can legitimise or exclude these interests but the NGO maintains that these institutions achieve the representation of local needs:

*"... it don't cause conflict as they think about the last project more than two years ago and think that if they manage themselves well an find the things we need to get the project it will make more projects. The people are here and they know how the [NGO] work. They may benefit before or they will benefit in the future ... I think [the NGO] know that those farmers know their local resources and their problems and their portions. You can't have discussions without knowing this otherwise it is difficult. Don't believe that the projects don't bring benefit, the village council would not allow a project that have no benefit for the people". (Representative C of the case study NGO)*

According to Trottier (2007), adequate analysis of local institutions that have traditionally managed water and power relations is lacking. Trottier (2007) argues that formal and informal arrangements have evolved to govern access to water and to control water use at the local level. NGOs play a role in reproducing or maintaining traditional social forms and practices according to their interests, in the same way that local participants create and recreate their own identities and social norms in the process of the intervention. There are cases of conflict between local activities and NGO interests, where farmers continue to use wastewater to irrigate their crops, despite alternative irrigation being offered by NGOs. In this instance, the wastewater was primarily domestic effluent, which consists of black water and grey water. The continued application of untreated wastewater to agricultural land suggests that external actors need to understand how decisions are made and how actions reflect local needs. Again, there is a need for NGOs to support multi-stakeholder learning through facilitating dialogue and on-going deliberation around these issues:

*"There is a problem here though. Wastewater in the Eastern part of this area runs to the springs here so the Village Council is trying to get this reservoir project to partially solve this problem to stop some farmers getting water from this wastewater flow and irrigating their lands with it ... The wastewater is destroying the land. The [NGO] Director ask them what assurance do we have that the farmers will stop using this wastewater but they said they couldn't give that ... The Village Council want to solve this problem by encouraging them to use water from this reservoir project ... The people here are thinking that when there is a lack of water the wastewater flow is free and they use it without dilution. It is a real problem and they don't eat this food they go to the market and sell it there ... Even if they get the project they might still use this as the farmer think all the time of benefit about the free water ... These are simple people they don't think about the environment or others". (Representative C of the case study NGO)*

The discourse of 'water shortages as a humanitarian crisis', not only shapes decision-making processes in the design stage of interventions but can simplify water issues in order to quantify physical outcomes for the purpose of evaluation and so legitimise further funding (e.g. the number of plastic water tanks distributed to households). The focus on emergency water supply by donor organisations, assumes that improvements

in water access is directly related to the construction and rehabilitation of water cisterns, wells and agricultural pools (Photo D). This understanding of water shortages fails to consider social and political processes that also shape the choice of technology, and will determine the distribution and allocation of water locally.

Photo D: The rehabilitation of a well and pool



The narrative of 'water shortages as a humanitarian crisis' is now examined in relation to the place-based categories from the meaning-based framework in Chapter 2. The analysis explores how NGOs and other stakeholders understand and engage with these place-based meanings and how they (re)present them in the narrative of 'water shortages as a humanitarian crisis'. Some of the headings for the place-based categories (Figure 2.0) are again combined for the purpose of the discussion in order to best capture the issues that emerged from the data and the interrelationships between them. Heritage was the only category from the meaning-based framework that did not arise in NGO narratives.

#### **5.4 Knowledge and adaptation, and uncertainty**

While recognising the significance of broader structural barriers and the impact of these on local decision-making and freedoms, the research supports the argument that

local people are experts in their own lives and have knowledge and skills, which can support them as they respond to and manage change and uncertainty:

*"The people are experienced. They were reusing the water to clean the dishes, clean the floor and flush the toilet with the same water ...".* (Palestinian Representative G of an International Humanitarian NGO)

Some local residents believe that the concept of participation has been co-opted for the wider purposes of international NGOs and for external agendas. As a result, intervention processes have not enabled them to attempt to exercise their rights, nor has it enabled them to share their experiences and perspectives in a process that builds on their knowledge and strengthens their capacity to respond to, and manage the uncertainties that they are confronted with in their everyday lives:

*"Water flows beneath us but we cannot dig wells on our own land. We get water from water tankers about 15km away ... We would like a filling point from the settlement pipes that runs along our land. I don't want it for free put a water meter on it and I will pay. It will make my life so different".* (Bedouin Shepherd A, Jordan Valley)

*"They [international NGOs] do not have a really accurate impression of the community about their level of understanding. I believe that the communities are experts because when you ask me about my needs, of course I know it, it's my needs ... when they are asked within a specific framework, generally [pause] it limits ideas. The more the community is involved, the more ideas. They are changing the design for activity, with totally new ideas, for example, we had an activity for them to harvest their trees in access restricted area. They said ... the trees are facing attacks from settlers who cut and burn them so we need to trim them. Or sometimes they are unable to clear the land of dry grass so the settlers are burning the land and the fire will spread over wider area ... So we are now supporting them in the three activities of land clearing, trimming the trees and olive harvest, to reduce the risk, based on their ideas".* (Palestinian Representative G of an International Humanitarian NGO)

Local residents from the case study village and settlement are familiar with participating in the structured needs assessment of NGOs. This process legitimises certain forms of knowledge and social identities within existing power structures at the village level and the wider political system. The 'water shortages as a humanitarian crisis' narrative, largely advocates that at present there is no alternative to this process of emergency or relief intervention, nor the political processes, and as a result social mobilisation is precluded from the discourse. Trottier (2007: 124) argues that NGOs:

*'... are maintaining a discourse concerning water that is useful to them partly because of the knowledge framework they operate in. As they derive their funds from the international community, they are locked into a discourse that empowers states as the only legitimate actors in spelling out water laws, and*



does not grant legitimacy to what is perceived as a counter-power to the state ... An NGO that would not adhere to the prevalent discourse would risk alienating its donors'.

The perception that the State should take a greater role in demand management in the immediate to longer-term has gained much currency in state and international discourse, where there is no recognition of traditional local institutions that still manage water.

The final draft of the 'National Water and Wastewater Strategy for Palestine', advocates the participation of all groups of society in Integrated Water Resource Management and in one policy statement, specifies what this participation will look like:

*'Encourage community involvement in the various stages of water resource development projects, including public awareness and training campaigns, to create an environment for effective management and ensure an educated public understands their roles and responsibilities in the effective management of water resources'.*  
(PWA, 2013: 15)

In this process, local people are required to develop specific skills and knowledge to manage local water resources in a sustainable and efficient manner. Participation is therefore tied to specific objectives relating to development (e.g. full cost recovery and increased agricultural and industrial activity), social change (e.g. there is an expectation that local people will think differently about certain issues relating to water resource use, particularly the reuse of wastewater), and the environment (e.g. the management of wastewater). However, the policy discourse does not extend participatory processes into the planning stages. Rather a member of the PWA stressed the role of NGOs as intermediaries at this stage, so that local priorities can be represented in water policy (Government Official B from PWA).

Similarly, decision-making during the planning and design stages of some NGO water interventions is exclusive to NGOs and their donors. The narrative of 'water shortages as a humanitarian crisis', gives precedence to this external decision-making process and expert or scientific knowledge. This is reflected in the choice of technology by donors and often in the temporal and spatial scale of the intervention. As one member of a Palestinian NGO stated in relation to wastewater treatment and reuse:

*"Each international organisation has its own preference of technology and implementation will always follow this. So the Americans prefer wetland technology but we have a problem with this as the land is limited and it needs a lot of land ... In Taybeh, the French have implemented Rotating Biological Contactor. You can find many technologies in Palestine related to the donor. The technology is always encouraged by the donor ... Palestinian NGOs mainly use home treatment technology*

*and small treatment plants at the community level". (Representative E of a Palestinian Development NGO)*

Local NGOs claim to understand water scarcity as a localised problem that necessitates micro-level interventions. These characteristically maintain traditional knowledge of water technologies such as wells and cisterns as well as building on local household and agricultural techniques that have developed in response to water scarcity, such as the reuse of grey water and rain-fed agriculture. Although some technologies and water sources, (e.g. cisterns, springs and wells) are culturally familiar and have historically evolved to maintain both local water systems and social practices, uncertainties exist as to whether accessible groundwater sources and rainwater harvesting will be able to meet even basic water needs in the in the future. The average daily amount of water used by Palestinians is between 10 l/c/d to 50 l/c/d (litres per capacity (per person) per day), compared to the WHO guidelines for access to 100 l/c/d for drinking and personal use (The World Bank, 2009). These figures indicate that daily water consumption is already substantially low.

Local narratives and NGOs identify a decline in groundwater levels, a higher frequency of drought and population growth (NGOs only), as challenges to these water sources and technologies. Groundwater supplies are argued to have been reliable in the past, before the occupation but as Cahill-Ripley (2011: 117) notes, 'water resources within Israel-Palestine are not being managed and utilised at a sustainable rate'. Furthermore, despite the rehabilitation of many rainwater collecting cisterns, local people are still experiencing water shortages as the water is not considered to be safe, (due to the observed changes in colour, odour and taste) and they lack access to the necessary resources, (such as 'at point' water treatment technology and water storage tanks (Photo E)).

Photo E: Plastic water storage tanks commonly distributed by NGOs





From this, it is apparent that donors, state actors and NGOs, need to engage with local people to better understand the challenges for sustainable water use. Local people who participated in the research are struggling to cope with water shortages, which involves a multitude of factors that are specific to place and to them. It should be emphasised that local people's experiences of water shortages are differentiated as the narrative of 'water shortages as a humanitarian crisis' can work to obscure this reality. From the viewpoint of local residents, their priorities for water provision are local and place-based. The self-reliance of the past may have partly resulted from the decentralised system of traditional water management within the historical context of occupation as well as the current perceived weakness of the government. In this context, there are apparent opportunities for NGOs to facilitate a process whereby local residents and other local actors can explore the importance of water, how they can achieve local water provision and the support that is needed.

The shortage of water has become the focal point for policy development and actions by NGOs, international organisations and the Palestinian Authority. The external actors have significantly different ideas about the knowledge and principles that should guide policy. Water scarcity for one international NGO that advises the Palestinian government, and which participated in the research, means greater demand management and efficiency. The international NGO and the PWA argue that this can partly be achieved by technologies that provide new water supplies, such as wastewater treatment and its reuse for agriculture (PWA, 2013). This discourse legitimises a focus on development aid and humanitarian relief, applied at the regional level in Gaza and the West Bank, rather than understanding that water scarcity is concurrently a localised problem:

*'It is therefore crucial that international funding support the national water management strategy in areas that pertain to the regulation and coordination of integrated water and wastewater investments and operations ...'. (Document 1: 67)*

*"One of the projects that is funded ... is for a wastewater treatment plant. It is completely designed by [an International NGO], it is a German technology, using the oxidation ditch, which is based on the extended aeration of the wastewater and mostly or completely mechanical treatment is applied. As it is extensive aeration system, it is consuming high quantities of energy ... you have a lot of mechanical parts so if a mechanical part is failed you have to replace it from the original supplier, mainly Germany so you have to import it. So it is high cost of treatment and maintenance although the effluent quality is good ... but you treat the water at high level and high quality but you dispose it in the wadi without benefit so there is no cost recovery. Without use in the agriculture sector so this is a problem ... The other problem is that because we are a country that is occupied, they divide it into Area A, B and C and there is settlements, the land and water continuity is not available to plan such large projects". (Representative A of the case study NGO)*

Water scarcity in the OPT has become an instrument in policy and in the aforementioned process of multilateral engagement. Knowledge about existing and future water resources and solutions to water shortages is constructed according to the different interests of internal and external actors (Zeitoun, 2008). Given the dominant narrative of water scarcity, international organisations have concluded that policy reform across the relevant ministries of the Palestinian Authority is necessary, particularly the Ministries of Water, the Environment, Agriculture and Energy. Although the water and wastewater policy is undergoing reform, (see the final draft of National Water and Wastewater strategy for Palestine which incorporates the language of economic and environmental sustainability, regulation and the potential reallocation of water to industry (PWA, 2013), a significant feature of the Palestinian Water Law No3/2002 is the principle that water is publically owned and managed by the PWA as a public good (Cahill-Ripley, 2011: 124). This principle is arguably compatible with local customs concerning water use, based on a wider understanding of water not as a commodity but as a material and symbolic resource (Allan, 2001). Allan (2001) argues that governments in this region have been reluctant to challenge cultural beliefs about the value and place of water, particularly its role in supporting livelihoods. Contrary to this, international discourse is centred around the principles of water efficiency and demand management:

*"... sometimes people see water as a human right and they understand that it should be free, but I think slowly they are understanding that ... there is a service behind it, so I think slowly, slowly they are realising that it needs to be paid for..."*. (Representative H of an International NGO and advisory to the PWA)

*"... they [the PWA] see there is a need to better manage the available water that exists. I think they also hope that the whole discussion will one day be linked to the political process. If there are political negotiations dealing with Area C ... this will also affect the whole availability issue. So I think they are going more through strategies and regulation, regulating the water service provider to at least deal better with the existing water".* (Representative H of an International NGO and advisory to the PWA)

The discourse of regulation and privatisation as economic solutions, presents an alternative knowledge of water management which will require significant adaptation, both politically, economically, socially and environmentally. The responsibility for regulating water use is placed within the PWA despite commentators such as Cahill-Ripley (2011) and Selby (2003, 2013), who highlight the asymmetrical power relations between Israel and the Palestinian Authority, the instability of the Palestinian Authority itself and the limitations of their legal infrastructure.

The PWA and local NGOs have been engaging with research into the principle of 'willingness to pay' but in the context of the West Bank and Gaza, the case study NGO argues that any pricing mechanism has to recognise that marginalised and poorer

groups are unable to afford the real costs of water delivery identified by international organisations:

*'A pricing system is to encourage investors to run water facilities efficiently. Realistic water pricing would make the users conscious of the real value of the resource and delivery systems, and would reduce the demand on those systems; it would also encourage efficiency through improved technology, and lead to water conservation and reduced pressures for costly system expansion'. (Document 2: 99)*

However, the case study NGO argues that pricing and cost-recovery mechanisms such as pre-paid water meters, will not resolve water shortages, due to the continued inequalities in extraction, delivery and use of water resources between Israel and the OPT. It is argued to be an issue of both water rights and power relations:

*'[The NGO] is against the use of prepaid water meters in Palestine, which we find to be inherently unequal and which ignores the tenet of water as a basic human right. Moreover, it overlooks the politicized nature of access to water in this region and presupposes that the primary issue Palestinians are facing regarding water is scarcity, rather than policy'. (Document 6: 1)*

In support of this position, Mehta (2000) problematises pricing policies due to their non-discriminatory application, which is argued to disproportionately affect the poorest and most marginalised groups in society.

Following the Dublin principles, which resulted from the International Conference on Water and the Environment in 1992, water was increasingly framed and analysed as an economic good with consequences for water management, access and delivery (Tremblay, 2011, Mehta, 2004). Proponents of what has become known as a market-based approach to water management stress the global nature of a water crisis and the increasing scarcity of water resources. Due to water scarcity, they argue that water resources have become increasingly valuable and so market mechanisms should be deployed to manage them, as markets can incorporate environmental externalities through pricing (UNWWDR, 2015; Winpenny *et al.*, 2010; Allouche and Finger, 2001). Market-based approaches have been represented in relation to a number of principles, including privatisation, decentralisation and user participation (Bakker, 2007; Allouche and Finger, 2001). The shift away from the state as the provider of water services to the state as a regulator of service delivery, reflects a belief in the failure of the public sector to make the necessary investments in the water sector to achieve universal access to water for their citizens, and so the need for public-private partnerships (e.g. The World Bank, 2014).

Petrella (2001) questions the ability of markets to address social and environmental issues and instead argues for water to remain a public good, recognising that public - private partnerships may be desirable under certain conditions. Petrella's (2001) call for an international legal framework for the individual right to water, is widely referred

to as the rights-based approach to development that emerged in the 1990s (Cornwall and Musombi, 2004). A rights-based approach is argued to provide a normative framework for development aid and programme objectives (Filmer-Wilson, 2005), while reframing participation as a political process to enable citizens to achieve autonomy and self-realisation:

'Human rights are intended to ensure the basic conditions needed for rights-holders to pursue their various goals'. (Merrills, 2007: 666)

The right to water has traditionally been derived from existing human rights provision (Gleick, 1999). In a review of the current legal basis for the human right to water, Cahill-Ripley (2011) argues that there is still a lack of explicit codification of water as an individual human right in international human rights law. Furthermore, due to issues of indeterminacy in relation to responsibilities and content, water rights and wider environmental rights are still considered in relation to other human rights (Cahill-Ripley 2011; Merrills, 2007). This indeterminacy is argued to contribute to the broad interpretation of the rights-based approach by governments, donors and international NGOs, with the mutual application of the beliefs about water as a commodity and as a basic human right in policy and programming (see the UNWWDR, 2015). In light of this, Mehta (2000: 13) suggests the need for '... more nuanced research ... to study the nexus between livelihoods, rights and environmental integrity in issues concerning the privatisation of water services'.

Local residents acknowledge that the current emergency water supplies from NGOs do help to alleviate their immediate water needs, but these relief interventions fail to address the worsening downward spiral of poverty and economic uncertainties. The effects of continued water shortages are felt by disempowered groups across the West Bank, including the Bedouin Shepherds at the desert margins and the village residents whose land has been appropriated in the southern hills of Hebron. Yet, the research challenges the assumptions that some international NGOs and Palestinian NGOs hold about the potential contribution that local knowledge can make to interventions in these circumstances.

Residents from the case study village and settlement have increasingly had to purchase water from private vendors and NGO tankers, as their options relating to water access and water use are progressively restricted, (e.g. preferred water sources, water which is free from contamination, quantity and timing). Meaningful coping strategies are integral to the daily lives of these local people and should not merely be recognised for their utility but as another form of knowledge, which can contribute to the intervention. The residents incorporated these experiences and knowledge into their narratives and asserted their priorities for greater self-sufficiency and self-determination. As discussed in Chapter 4, in this context, knowledge survives as a significant form of resistance of culture and local identity, which is embedded in place.

During the research, it became apparent that even though there is a widespread view that water extraction in the West Bank outweighs groundwater recharge, knowledge gaps and uncertainties exist at different levels, relating to the amount and quality of groundwater that is available in the region, rainfall variability, sustainable rates of groundwater extraction, and the impact of climatic changes on water availability. As a result, a plurality of narratives have been produced to fill this gap, each implicating different causes and solutions to water shortages:

*"The main problem is still the same, the shortage of natural resources, because Israel's control on the natural resources ... If we control our water, there is enough water temporarily... for the West Bank and Gaza ... but in the long run we need more water". (Government Official A from MEnA)*

*"There were many water sources, now only one water source and we cannot use water as much as we want as the valley is dry all the other springs are dry". (Head of the Bedouin settlement, Jordan Valley)*

*"There is enough water, but it is poorly managed". (Representative H of an International NGO and advisory to the PWA)*

*"I remember a water engineer and Government advisor was asked by donors what the needs of the population is at a conference. He said ok, there are three major needs, first drilling the wells, second drilling wells and third, drilling even more wells. So that is the solution, to have our fair share of the water". (Palestinian Representative G of an International Humanitarian NGO)*

Rainwater harvesting as a traditional form of water management is now associated with greater uncertainty and risk in the case study areas, due to a perceived decrease in annual rainfall. According to Zeitoun (2008), there has always been significant variability in rainfall across the West Bank as well as year to year variability. However, at the local level, many households now rely on rainwater harvesting as a single source of water and so experience this variability more acutely. Whether traditional water resource management can meet basic needs for water for survival and local priorities over time, is uncertain in the context of climate change and unequal access to water. This question suggests the need for increased local participation, dialogue and co-learning to help to bridge the knowledge and policy gap.

Some NGOs are trying to support alternatives and local innovation, so that people can sustain livelihoods, social water practices and other valued dimensions of water in the longer-term:

*"... we are surprised in some communities, they have agriculture on roofs, this is something that NGOs should learn from. They are really experienced, they are surprising us with innovation they have. We are supporting them to be self-reliant and*

*to support their own initiatives, it is something we will continue to do". (Palestinian Representative G of an International Humanitarian NGO)*

NGOs that report having observed local adaptation and innovation, similar to the above example of communities initiating green roof agriculture, relate local adaptive capacity to sustainability. Whether it is learning how to reduce water loss from small-scale irrigation systems or experimentation with growing different crops that require less water or can tolerate grey water, these NGOs argue that local people need to be supported to respond and adapt to changes in water availability and access, rather than adjusting to water shortages in the short-term, which can have deleterious effects on the health and wellbeing. The representative from the NGO in this example, is questioning the traditional distinction between NGO as the 'expert' and participants as the 'novice' in water interventions, by facilitating a connection with local knowledge and experiences. This observation also suggests that learning becomes more of an emergent feature of NGO engagement with local communities and is in some way integral to the achievement of sustainable water interventions - an idea that will be developed in Chapter 6.

Adaptive capacity and sustainability have been conceptually linked in resilience theory, which has applied the terms to both ecological and social systems (e.g. Gallopín, 2006; Folke *et al.*, 2002; Adger, 2000). The relationship between these concepts remains contested, with some writers conflating the two terms adaptive capacity and resilience (e.g. Jabeen *et al.*, 2010), while others argue that adaptive capacity is a component of resilience (e.g. Carpenter *et al.*, 2001) and resilience is a property of sustainable systems (e.g. Mehta *et al.*, 2007).

Tidball and Krasny (2014: 26) define resilience as '... the ability of humans, communities and larger social-ecological systems to rebound and to reorganise in the face of outside stressors ...'. From the literature on social and ecological systems, resilience is characterised by diversity, the ability to foster learning from multiple forms of knowledge, adaptation and self-organisation (Tidball and Krasny, 2014). These elements suggest the capacity for resilience can be developed. As a result there has been greater research into the processes that support resilience, for example, research focused on organisational learning and meta-learning (e.g. Jabeen *et al.*, 2010), as well as transformative learning (Sinclair *et al.*, 2013). Tidball and Krasny (2014) identify a number of processes linked to the development of resilience from case studies of grassroots initiatives that involve active participation with nature, such as community-based tree planting and natural resource management. The significance of the process of meaning-making becomes apparent from these case studies, as people come to terms with, and respond to change in the context of conflict and disaster.

This research is interested in how people can be supported through the process of responding to uncertainties and change, including the (re)creation of meanings. It will explore the role of learning in relation to this in Chapter 6. However, this research



recognises that the capacity to negotiate meaning and to respond adaptively to water shortages will not be experienced equally (see Leach *et al.*, 2010; Jerneck and Olsson, 2008). Furthermore, if learning and action remain restricted to the local level due to unequal power relations and the dominant interests of specific individuals and groups, the capacity for resilience will be constrained. Therefore responses to local and regional water issues may require the negotiation of existing power relations and meaning between diverse stakeholders at a number of levels.

Local narratives described water systems that can meet multiple needs based on traditional methods of rainwater capture and storage, springs and agricultural wells. Social, political, economic and ecological realities have all contributed to the need for diversity (e.g. multiple livelihood strategies and seasonal migration). Diversity, adaptation and agency all appear to be dimensions of local understandings of resilience, in addition to social relationships, local knowledge, and equity.

For example, female residents from the case study village, whose heritage is rooted in agriculture and rearing livestock, prioritised water for the household and a water source for home gardens, which could also sustain small-scale animal husbandry. The women's committee valued collective activity and a strong social network. However, in cases where NGOs had implemented water projects for home gardens in Bedouin communities and cooperative income generating projects, the interventions failed as these activities and form of social organisation are not part of their way of life and shared identity:

*"... certain organisations are giving the farmers and householders a water cistern and a home garden for livelihood and food security purposes. What happened, is that projects are implemented in water poor areas and people are focusing on having water for domestic purposes not for agricultural. Agricultural is not priority, they want to drink and have water for domestic use but they don't have enough water. Then after the project cycle are finished, the home gardens are finished. You have only 20 per cent of them carrying on. The other reason is that, you come to me and I am not a farmer. I am a herder. Then you give me a home garden project but it is not my priority". (Representative A of the case study NGO)*

This example helps to clarify what informs local understandings and perceptions of water interventions, and what can be learnt from local narratives. Connectedness to the past, and the need to affiliate oneself with others, appear to influence participation (and non participation) in local NGO and international NGO projects. Local NGOs are perceived to have certain knowledge and an understanding of a shared way of life, (e.g. cultural norms, values and beliefs) despite the observed differences in their discourse and the varying degrees of local participation in projects:

*"... International NGOs are not involved enough or deeply enough to solve the problem ... while I am talking to a local NGO it is not the same as talking to foreigner. Let's say the first language, then the culture ... There is just not the same trust as local ones.*



*They want NGOs to be talking to them as they know them". (Representative C of the case study NGO)*

Local NGO interests and their capacity for working in a more collaborative way at a number of levels, will vary widely. It seems problematic to assume that greater local participation and representation will result in local needs being met, especially the needs of more marginalised groups, as outcomes are dependent on the historical context, how participation is understood, (its purpose and practice) and existing power relations (Reid and Nikel, 2008). The challenge for NGOs, as argued by Reid and Nikel (2008) and others (e.g. Mehta *et al.*, 2007; Chambers, 2005; Scoones and Thompson, 1994), is to participate in the lives of local people; to involve local people in the analysis of water issues and to learn from their experiences and perspectives through dialogue. Once again, alternative responses to local and regional water issues and uncertainty, may require the negotiation of meanings as well as existing power relations. The research suggests that this is already happening in some contexts, for example, an acceptance of water from new sources such as the reuse of grey water and the payments required for piped water delivery where access to traditional water sources is restricted. Chapter 6 will therefore explore different learning perspectives and the implications of these for intervention processes and outcomes.

## **5.5 Social relationships**

The narrative around 'water shortages as a humanitarian crisis' in the West Bank and Gaza, can obscure social differentiation and inequalities at the local level that water practices come to express. NGO-led community-based water interventions may enable certain local institutions over others, with consequences for the social relations of water access and use (e.g. Crow and Sultana, 2002).

Local narratives describe having equal access to water before the occupation of the Palestinian Territories but reveal little about the customary law regulating access to shared water resources. Trottier, (1999: 3) writes that control over water resources, has '... constituted one of the bases of the structure of local power for centuries'. NGOs focus their needs assessment at the household level but negotiate access and the selection of project recipients through village councils. It is through these relationships that NGOs come to understand local experiences of water shortages. The head of the village council and its members are invariably the traditional gatekeepers who influence participation and the process of water interventions:

*"Most NGOs work with the Village Council as it is the easiest and they are the people who have more experience with working with NGOs and they are the people that give you more suggestions within the framework of the proposed project. With the community it would bring richer suggestions, to conduct one session, even just using simple statistical methods with 20 members randomly selected from the community.*

*The Village Council are not bad but it will be different from the community ... You have to consider social relationships when you start a project. With social dispute and affects of political parties and family loyalty is part of it." (Palestinian Representative G of an International Humanitarian NGO)*

Some members of the case study NGO and others involved in the water sector who participated in the research, recognise that an NGO's way of being and operating, can reinforce political and social processes through which power is exercised locally:

*"Sometimes, you come to a certain water agricultural source, like a spring which is for 5 farmers or 8 farmers. Then if you study the water management scheme for this spring, you find that these families have a agreed upon management policy for many years. Some of them even have written agreements from the Ottoman period. You are not advised, to change the water arrangements. You have to ask them and to tell them that I will guarantee what you have agreed upon before, to use water by the same method". (Representative A of the case study NGO)*

In the above example, the engineer reflects upon the way that local NGOs attempt to observe social relationships and how local powers relations can affect the sustainability of water interventions and the development of alternative solutions to water shortages. With the exception of this account, descriptions of formal local water management systems and informal rules and practices which govern access to water and water use, are absent from NGO discourse. Both formal and informal practices and social arrangements that control local water resources, result from social relationships. Unless the historical context in which these institutions developed is understood, inequalities in access to water are likely to remain. Trottier (2007, 1999) documents the historical changes in power relations with concurrent changes in water management at local, national and international levels. Trottier (2007) argues that, until the British Mandate, shared water sources were managed at the local level, over which notable families yielded significant control. As the technology to drill wells became available to these land owners and farmers, local institutions developed to manage the new technology and water. Trottier (2007) argues that, water for irrigation was subsequently managed as a private good, benefiting individuals who were able to negotiate the new rules governing access to water. Despite the subsequent system of quotas imposed by Israel on Palestinian wells and the formation of the PWA in 2002 as the water regulator, Trottier (2007) maintains that local institutions have retained some legitimacy and contribute to inequalities in water access and use at the local level.

The research highlights the need to further explore local relationships as it is through these, that societal norms, beliefs and values are maintained or contested. Social relationships can enable or deny individuals and groups access to certain benefits. Both female residents from the women's committee and Bedouin shepherds describe how they remain excluded from access to, and the management of certain shared water

resources as well as experiencing intra- and inter-household conflict over the allocation of water. Furthermore, White (2008) argues that relationships influence how individuals identify themselves and identify with others. Subsequently, the priorities that people identify for themselves, are often associated with certain roles, responsibilities, entitlements and rights. Therefore, a learning approach to water interventions needs to be open to different understandings of water issues, and needs to understand that people will respond to these issues and uncertainty in multiple ways, depending on their social identities and relationships. Approaches to learning that explore these interpretive structures and the struggle over meaning will be discussed in Chapter 6. The research recognises that NGOs could potentially facilitate or mediate what must be a negotiated process between different stakeholders, and that local people need to be prepared for this process in order to be able to respond to multiple and contested understandings of water scarcity (see Gough and Stables, 2012).

In relation to sources of drinking water, the situation differs in respect of the relationships identified by local people and NGOs. Household cisterns that collect rainwater, are managed at the household level in the case study villages. Additional drinking water is purchased from private vendors and NGOs who subsidise the costs of water transported by mobile water tankers. Many donors grant funds to support domestic water needs guided by their individual agendas, which is argued to have a significant impact on the water and sanitation sector as it determines the type of interventions that are funded (e.g. Trottier, 1999). The case study NGO suggested that donor organisations has greater control over the directionality of the water sector and water interventions due to the dependence of multiple stakeholders, with often competing interests, on international financial assistance:

*'It has been suggested ... that – at times – there is some tension between large NGOs such as [the case study NGO] and the governmental departments responsible for water, agriculture or environment – because both depend on foreign funding for development project'. (Document 4: 79)*

*'The partner they choose to deal with comes out strengthened in comparison with the other actors competing for the control of water'. (Trottier, 1999: 208).*

As the research has observed, international donors are concerned with the development of Palestinian water institutions. These donors are attempting to shape government and private water institutions, and the legislative and regulatory frameworks which govern them in order to centralise decision-making and privatise service delivery. At the local level, donors and the Palestinian Authority favour the creation of Water User Associations (WUA) as *'institutional partners in irrigation water management'* (PWA, 2013: 21). Participatory water resource management became the global water consensus with the objective to integrate disparate activities, knowledge

and rules in relation to water resources (Tremblay, 2011). International donors have been supportive of policy to devolve responsibilities for water service delivery to civil society and communities in Palestine, in partnership with the private sector. However, without denying the importance of integration in water resource management, research has found that structural inequalities often endure in regions where Integrated Water Resource Management (IWRM) has been implemented as a management structure for national, regional and local water resources (e.g. Saravanan *et al.*, 2009; Watson *et al.*, 2007; Schreiner *et al.*, 2004). Furthermore, with the existing inequalities in access to water in the OPT, it seems problematic that these governance arrangements would increase Palestinian's access to water and water use.

The general principles associated with IWRM have been criticised for ignoring the contextual specificity of management. Cleaver and Toner (2006) observed the coexistence of local and historical social practices in which people engaged to negotiate norms of access, water rights and water use, despite the creation of WUA by donors and other external organisations. Furthermore, Lotz-Sisitka and Burt (2006) argue that the emphasis on local capacity to manage water service delivery and to achieve sustainable and equitable water resource management is problematic due to the financial requirements, technical knowledge and negotiation skills that are required. Effective advocacy and capacity building is required for poorer and marginalised groups that are excluded from decision-making processes. While not understating the need to continue the debate to politicise access to water through a rights-based approach to water, capacity building and advocacy is arguably needed in the OPT, where enduring inequalities affect access to water locally, regionally and nationally.

NGOs often espouse alternative social and political processes to the state and to traditional power structures, but this research observes that the relationships identified by the case study NGO as effective for their work can still create and maintain power relations and discourses that reinforce inequalities. The case study NGO identified international donors, governorates, some municipalities and the village councils as significant partners. Often, it is politically beneficial for governorates and village councils to secure water 'relief' projects in certain areas and donors have specific agendas relating to their own interests:

*"... the village council, they are changing all of the time with elections and by the Palestinian Authority. The political party affects it sometime. As the Village Council are changing, the Major are changing, things are not sustainable. Many Majors want people to see that he is doing projects on the ground so he spends very last of the budget to show people that he is acting...The next Major came and he find an empty box. No money to continue with projects. Sometimes he can't pay maintenance for existing projects. This is a problem so what I advise for my projects and others, from experience, is to collect the farmers and make discussion with those important stakeholders ... None of the projects for rehabilitated springs have been sustainable".*  
(Representative A of the case study NGO)

The multiple stakeholders and multi-level relationships require NGOs to identify the power structures they engage in (whether local political processes, local cultural norms or social practices), as well as aspects of their work that are compromised or suspended with each relationship, as commented on by a Director of a local branch of the case study NGO:

*"... the partnership, we aim to have a real partnership, you know, [pause] as one body, so we are thinking, we are proposing and implementing as one body. It doesn't mean, personally, we don't enter a partnership just to get the money through and after that finish ... Some are like this, but personally we are not. [The NGO] don't like money wise partnerships and if we feel they [the donor] are not working in the same way, they will not propose together. Some came to us to propose and we felt it was against our mission so no, no ... you cannot have conditions imposed".*  
(Representative B of the case study NGO)

### **5.6 Broadening conceptions of place dependence: Activity and identity**

The importance of diversity in relation to household activities and activity as an aspect of identity, is largely absent in representations of Palestinian livelihoods and local experiences of water shortages within the narrative of 'water shortages as a humanitarian crisis'. In Chapter 4, activity was observed to be crucial for the continuation of a certain way of life rather than to solely meet household needs that often define place dependence. Identity is continually reproduced, produced and negotiated through activities that are situated in a particular historical context.

A dominant narrative in the global discourse around water, relates to the importance of water in international development. Water is generally seen as a limiting factor to livelihoods, food security and to the sustained economic development of the state, (e.g. UNWWDR, 2015; Faures and Santini 2008). Allan (2001) observes a salient connection between water in the Middle East and activity; particularly water for agricultural activities due to the economic and cultural role of agriculture, evident here in the final draft of the Water and Wastewater Strategy for Palestine:

*'Sustainable management of water resources is vital to the Palestinians' long term prosperity. Water is essential for human and other life and crucial for the development of agriculture and industry, as every sector depends on secure and sustainable access to water'. (PWA, 2013: 10)*

The historical social, political and cultural role of agriculture in the Middle East is argued by Allan (2001) to determine the allocation of water resources for irrigation and the technologies used. In Palestine, the PWA (2013: 19), states, *'farmers shall be encouraged to use modern and efficient irrigation technologies. Protection of on-farm workers and of crops against pollution with wastewater shall be ensured'*. Wastewater treatment

projects are heavily financed by international donors, thereby effectively influencing decision-making within the PWA regarding water infrastructure. The strategy establishes an ambitious target for the application of 40 per cent of treated wastewater to the agricultural sector, considering the observations of NGOs that treated wastewater is not currently being managed due to political and social barriers.

The focus on technologies to create 'new water supplies' for agriculture, fails to address distributional and relational aspects of water management at the local and regional level. The Bedouin shepherds describe situations in which they experience water shortages from skewed water use for irrigation as a result of local political processes and power relations. Pastoralism, both as a livelihood activity and way of life, is largely absent from government and international NGO discourse. Such sectorial biases are obscured by the global narrative of water for development and in the valuing of water as an economic good. Further research would be beneficial to explore household and village arrangements for the management of household, private and shared water sources, for a range of livelihood activities.

Local narratives emphasis agriculture amongst a broader array of livelihood activities and strategies, including rearing livestock and home gardens. These activities are argued to serve as a foundation for their way of life and for individual and collective identity. In view of this, ideas around sustainability could be beneficial to the discourse, when exploring the linkages between water and livelihood strategies and the role of livelihood strategies in the lives of local people over time, (including social, cultural and material dimensions). The sustainability of water provision could encompass social relationships (both those that enable and constrain access to and use of water), the proportion of household income spent on water, in addition to local relationships with the environment, which would necessitate a dialogue around environmental limits and ecosystem health (see Mehta *et al.*, 2007).

The future of agriculture in the region is currently being debated in the face of water shortages and recognition of the environmental value of water due to the influence of global discourse:

*'It is also important to maximizing the productivity of scarce fresh water resources through evaluating the traditional role of agriculture in the national economies'.*  
(Document 2: 41)

Allan (2001) argues for the necessary reallocation of water from agriculture to industry and other sectors, and documents Israel's progress towards economic diversification. Allan (2001: 147-148) argues that:

*'In the mid-1950s the agricultural sector was a major force in the national economy. The economic and social significance of agricultural water use underpinned national identity, economic policy and international relations. By the mid- 1980s agriculture was a minor element -less than three per cent- of*



the national economy. Despite the statistics, the actual role of agriculture in the political economy remained politically influential ... In Israel it became politically feasible to regulate demand ... and to re-allocate by increases in the price of irrigation water ... Domestic users of water could easily afford the real price of water delivery'.

Allan (2001) does recognise that the economic context is significantly different in the OPT, which he argues, restricts the possibilities of political reforms in the water sector and the use of economic instruments to regulate water demand. Following the research in the West Bank, any analysis needs to understand the effects of international relations and global discourse as well as the historical and cultural context which shape understandings of water, development and the economy. Although the Palestinian Water and Wastewater Strategy mentions water use for industry and agriculture, the debate over the reallocation of water away from agriculture, has not yet entered national discourse, even in the PWA's 'Climate Change Adaptation Strategy' (PWA, 2009). Furthermore, despite the documented re-appropriation of land and water resources in local and NGO narratives, the case study NGO reports an increase in the demand for water for agriculture:

*'... a severe rise in poverty has increased the reliance on agricultural production and livestock ... Consequently, an increase in the agricultural sector means a greater demand for water' (Document 1: 46).*

Livelihoods have traditionally been a source of income and local productivity, but local narratives provide a richer description of agro-pastoralism as a way of life that is associated with identity. NGOs can neglect to acknowledge that these communities have been able to sustain diverse livelihoods and have knowledge of living economies built on local activities. Water scarcity in the region is not merely an issue of physical shortages of water. Water issues need to be explored in relation to livelihood strategies (including dryland agriculture), and other activities which meet the priorities identified by households and have meaning for diverse ways of living and identity.

Donors, government officials and NGOs in Palestine attempt to increase water supply based on norms for domestic water supply. This research found that the water obtained for domestic needs is also used for livestock, as rural communities remain dependent on livestock rearing and agriculture. It is unclear what proportion of domestic water is assigned for livestock and other activities that reduce household expenditure or provide an income. The central argument in a report by Moriarty *et al.*, (2004: 16) is that 'water needs always extend beyond the domestic'. A number of case studies demonstrate that people use water in different ways beyond the functional uses that planners, governments and development organisations often assume. Moriarty *et al.*, (2004) call for a review of domestic water supply and the sector-based approach to water interventions (e.g. the domestic / productive binary system), due to the benefits that access to water for a wider range of needs provide in relation to household



poverty and health. For example, activities that relate to the production of food and income generation such as kitchen gardens, livestock rearing and rural crafts.

The report by Moriarty *et al.*, (2004: 40) quantifies 50-200 litres per day per capita, depending on the context, as an estimate of a productive water supply that incorporates these livelihood and subsistence activities. Although the report's findings and recommendations for a productive water norm raises questions about the application of this where water shortages and inequalities exist, including questions around whose responsibility it will be to practically fulfil this right, the report does prompt discussions about the importance of water quality relative to the amount of water that households receive; the role of technology in helping to meet multiple needs; collaborative working across sectors and organisations; and the reallocation of water.

### **5.7 The symbolic and nature**

For local people, water interventions do not only bring a potentially sustainable source of water to the village. The process, if participatory, can also enable people to (re)construct meanings about self, community and nature. Returning to the central thesis of the research, water resources are argued to embody multiple meanings, which are embedded in social relationships and cultural practice (Mehta and Movik, 2014; Mehta *et al.*, 2001). Water practices therefore serve to maintain or negotiate cultural norms, values and beliefs.

NGO and government narratives recognise traditional beliefs of water as god-given and the prescriptions that these beliefs provide for water use. Cisterns have traditionally been central to the lives of the members of a household alongside shared water sources such as springs, which were communally managed. However, some wells were privately owned and the extracted groundwater became a material resource, central to local economic and political processes. Consequently, water can be understood as both a free resource and economic good, used to express cultural, social and symbolic dimensions. The symbolic dimension is not always captured in local NGO and government narratives. However the metaphor of land and water as self is often drawn upon by these stakeholders in arguments for the role of water in development. Here, the symbolic is assumed to be congruous with the material dimensions of water:

*"Water is the emblem of attachment to the land as well as to the water itself on the surface and deep inside the land, which is the key to any economic and social development". (Government Official A from MEnA )*

Local people value the drinking water that flows to the surface in the natural form of springs so alternatives are less attractive due to differences in taste, quality and cost.

However, village residents do recognise that rainwater is climatically dependent and, due to dwindling supplies of groundwater and restricted access to shared village water resources, they recognise the costs involved in delivering water to the community:

*'The lack of sovereignty has led to the situation in which citizens do not rely on the State for services, even distrust state authorities, and are tired of practices of corruption that emerged. Citizens have become used to a situation in which their basic needs, such as health care, water supply and education were taken care of by non-state actors, or by their own efforts'. (Document 4: 84)*

The dependency of local people on NGOs to rehabilitate village cisterns, and on private water vendors, has involved the negotiation of the symbolic meanings associated with water and place (for example springs in some villages have become symbolic of dispossession and the loss of connection to the land and agricultural traditions). NGO, donor and government narratives which focus on alternative sources of water and local payment for water services, need to engage with the process of meaning-making and the metaphors around water and place that have emerged. Gough and Stables (2012: 370) argue that the continuous process of meaning-making which shapes people's lives and their interactions with the environment and others, is the only means of coming to terms with change.

Furthermore, in relation to the process of meaning-making in the face of change and uncertainty, Tidball and Krasny (2014) argue that grassroots natural resource management projects are central to building human and ecological resilience. They argue that the process must engage with diverse forms of knowledge and meanings in order to facilitate adaptation and change. This is pertinent to the OPT as some environmental NGOs believe that Palestinians have become disconnected from the land and water (Nature), due to development, the disenfranchisement of Palestinians in the West Bank from the Palestinian Authority, the Israeli occupation and the influence of the Other (Western cultures):

*"In the last 40 - 50 years, life have been changed. The life become quick, more concrete houses, more building of apartments, the people have been taken out of dealing with the soil, with the plants ...". (Representative F of a Palestinian Environmental NGO)*

Narratives such as these guide communication and environmental education programmes, with an emphasis on environmental activities, such as litter free campaigns. According to the Director of an environmental NGO, these activities aim to enable individual and collective action, from which, participants may engage in further activities toward social and environmental change. However, the Director observes the continuation of environmentally destructive behaviours following these projects, which suggests the need to understand how people derive meaning about nature from such experiences. Similar to other Palestinian NGOs, this environmental NGO takes an egalitarian view of the human relationship with nature, which

determines the learners who participate in these programmes (school aged children), and the content of this learning (focus on ecology, conservation and nature values). The research suggests that water interventions will need to confront alternative and conflicting perspectives about society's relationship with nature, beyond the idea of the traditional or indigenous human-nature relationship.

## **Chapter 6: Water, Learning and Sustainability**

### **6.0 Introduction**

I begin by reviewing the core findings and propositions from Chapters 4 and 5 as candidates for further exploration in relation to a learning perspective. Each core finding ends with questions that compel continued dialogue and present possibilities for future research and debate. These core findings are then used to guide what is possible educationally in relation to water interventions. It is argued that social learning can potentially help to incorporate multiple knowledges, including the knowledge of marginalised groups that might otherwise be excluded from the intervention process. Social learning is introduced as a reflexive co-learning process that involves groups, communities and organisations, whether through multiple loop learning and / or communities of practice (Lave and Wenger, 1991).

The interest in NGO and community co-learning goes beyond arguments for efficiency to achieve intervention outcomes, to the value of social learning for the realisation of marginalised groups' capabilities and sustainable outcomes. Although this chapter will explore learning processes, particularly the mediation of knowledge based on social learning perspectives, it is important that learning approaches are not restricted to this in practice. As Lotz-Sisitka (2012) argues, learning should not become another normative concept like participation, that loses its meaning due to the multitude of ways in which it is employed in development discourse. The various perspectives on learning (e.g. behaviourist, cognitive and situative), are argued to have implications for how the purpose and process of learning are conceptualised and so for the outcomes that are assessed (Dillon, 2003). Therefore, reflexivity is an important process in social learning practice to enable practitioners to understand the implications of the conceptual roots of learning approaches (Lotz-Sisitka, 2012).

The chapter also draws on cases of longer term collaborations between NGOs, researchers and communities. Examples of social learning processes are discussed within the context of water interventions in Israel and Palestine as well as South Africa. These additional case studies help to highlight the importance of varied actions and processes across a number of scales in order for civil society to participate in decision-making at both programme and policy levels. In the final section, a model linking social learning and sustainability is proposed for the purpose of encouraging discussions about the processes that can strengthen local participation in decision-making, build capacity and develop agency in water resource management.

## 6.1 Core findings from Chapters 4 and 5

- *Meaning matters*

Water connects people to remembered histories; to shared understandings of the land, identity and community; and to what it means to live well. In local accounts of water the present is interpreted in terms of the past due to people's experiences of dispossession, exile and loss. Local people engage with water in a diversity of ways that are understood to encompass socio-political, cultural, and environmental dimensions. These meanings are considered to be contested and dynamic over time and space.

A meaning-based framework was proposed in Chapter 2 to reconnect dominant narratives surrounding water in the West Bank to local understandings and perspectives. In particular, Chapter 5 explored framings of water shortages as a humanitarian crisis in the region, which have resulted in standardised, emergency water interventions. Donors predominantly address water shortages as a technical issue of distribution, defining water needs in terms of water requirements that are detached from local meanings and political processes.

*This research has suggested the need for greater dialogue around how place-based meanings and alternative narratives can be explored in community-based water programmes and activities.*

- *'Directionality' and knowledge*

The research observed how different stakeholders promote certain narratives or problem-definitions about water shortages. These narratives then shape water interventions at the regional, national, and local level. They also determine what knowledge is deemed important, the stakeholders who are involved in decision-making processes and subsequently who shapes the intervention process and outcomes. This is termed as the 'directionality' of the water intervention by Movik and Mehta (2009: 7). As a result of the occupation of the West Bank and donor compliance with the status quo, a top-down approach is currently observed to be prevalent in relief interventions.

The research focused on marginalised groups in the West Bank, including residents of a village in a remote rural area in the southern Hebron Hills and Bedouin communities in the Jordan Valley. In the dry season, these communities are amongst those that are reported to survive on less than 30 litres per day and lack access to adequate sanitation (UNOCHA, 2014). This current daily amount of water is well below the WHO recommendations. The residents of these areas discussed their experiences of such acute water shortages and its impact on their everyday lives. Emergency water interventions are deemed necessary by local people as they perceive the Palestinian government as an absent governing authority but they describe the current process of

these interventions as disempowering as there are few opportunities for them to articulate local meanings and knowledge and to participate in decision-making.

Communities experience the arrival and departure of relief projects due to the nature of short funding cycles in addition to the restrictions imposed by the occupation that constrain even medium-term interventions. The communities also identified uncertainties around the continued use of certain water sources that requires knowledge sharing. This knowledge could support communities in their decision-making about more immediate needs as well as the longer-term sustainability of certain water management practices and water provision.

Although local technologies such as water harvesting and storage are incorporated into many NGO-led programmes, external knowledge can still be privileged over local experiences and priorities. While donors remain major stakeholders in water provision in the West Bank and promote problem-definitions that are constructed at the global level, water shortages are likely to continue to be framed as humanitarian and technical issues and capacity building will solely remain instrumental to this. When donors and the recipient communities differ in their understandings of water issues, there is a danger that the problem-definition is imposed from the top.

*This research suggests the need to explore how diverse knowledge and multiple problem-definitions can be captured and integrated into intervention processes? How can NGOs enable knowledge to flow from the bottom-up?*

- *Participation and power*

Everyday water practices are shaped by social and power relations that not only determine the meanings attached to water resources but who has access and how water is used and managed (Coles and Wallace, 2005; Mehta, 2005). These power dynamics are inevitably also a part of intervention processes. Although local NGOs are recognised for valuing local understandings of water in marginalised communities, NGO engagement with traditional local institutions, such as village councils, can act to consolidate existing power relations. Without opportunities for participation in ongoing discussions and deliberation about NGO-led activities, dominant interests and power relations will remain unchallenged. In particular, all of the women who were interviewed discussed how their responsibility for water management in the household is being increasingly challenged. This was discussed in relation to longer periods of water scarcity and conflict between water users outside of the household. However, the interests of women did not appear to be specifically discussed or represented by community institutions or the case study NGO in the public realm.

The fieldwork highlighted further intra- and inter- tensions related to water access and management either as a result of the introduction of new water technologies (for example constructing a pump for spring irrigation and changing traditional access arrangements), or competition for limited resources which can be driven by a number of factors. The fieldwork highlighted complaints that pastoralists' needs were not being met and water was being over abstracted for agriculture.

*The linkages between global and local power relations suggests the need to address how more equitable participation and decision-making can be cultivated during water interventions to reduce intra- and inter-community tensions?*

- *Local agency and capacity building*

The predominant focus on relief interventions in the West Bank has been observed locally to weaken community mobilisation. This is attributed to the externalisation of decision-making to donors and other external organisations as well as dependency relationships between NGOs, their donors and recipient communities. Many residents expressed their frustration at not being able to exercise their capabilities when intervention outcomes take precedence over processes such as participation and capacity building. Many NGOs recognise that the current situation in the OPT results in the suspension of questions relating to local agency, ownership, community organisation and sustainability.

However, local ownership and empowerment are not only dependent on mechanisms such as participation and representation but are shaped by resources and the structures in a given context (Cleaver and Franks, 2008). Therefore it is recognised in this research that even if programmes support capacity building and community organisation at the local level, without a multi-levelled approach as well as national and international support, especially from donors, these marginalised Palestinian communities will not be able to realise their water rights in the immediate future:

*"The aid donors ... aren't really doing anything, they are not challenging the status quo and the status quo is the occupation. In that sense in the West Bank, there are a lot of restrictions on what people can do, even in terms of enhancing water or building water harvesting schemes. I think it is a very unusual situation. In another situation where there is scope, then of course you can make demands, you can claim accountability and protest, but in this situation it is desperate. I think the main issue is the occupation [pause] You have to say that Palestinians should have control over their own water resources, that for me would be the solution ... The donors too need to work towards that and lobby the Israelis to make that happen". (Extract from an Interview with Professor Lyla Mehta, November 2015)*



- *Sustainability*

Emergency water interventions are perceived to fail to bring improvements to local people's lives in any sustained way by the residents in the case study areas, and by partner NGOs. The reasons for the pervasiveness of the narrative concerning 'water shortages as a humanitarian crisis' and the limited transition from emergency to development-related water interventions are complex, and have been discussed in relation to; national and global political processes, the lack of accountability of government and non-state actors, the effects of global policy transfer, and dependency relationships between donors, NGOs and local communities. In particular, NGO accounts emphasised the impact that decision-making in donor agencies has on the sustainability of the outcomes of community water interventions.

The linkages that have been explored between water, local activities and identity, suggest the importance of an integrated awareness of the needs of local people as well as water systems (both local and trans-boundary water sources). It is argued that knowledge needs to flow from the community upwards, but scientific knowledge also needs to be mediated at the community level to bridge the knowledge gaps that local residents identified in relation to sustainable water management. Sustainability is understood in this chapter in relation to local people's discussions of the social, economic and environmental dimensions of the concept, including equity, intergenerational rights and the continuation of cultural practices and norms.

*My research proposes the need to further investigate the question of the relationship between learning, agency and sustainability in NGO-led community-based water interventions.*

In such impossibly difficult and complex circumstances as have been described in this research, communities attempt to communicate their knowledge and meanings in a context of extreme power asymmetries and multiple problem-definitions about water shortages. This research recognises the argument that until Palestinians' right to water are acknowledged and protected, restrictions to interventions and self-determination will continue to the detriment of these communities wellbeing and with consequences for the environment. This is a argument voiced by Professor Lyla Mehta:

*"Donors do water reform everywhere, that's a way to introduce global frameworks or maybe market driven mechanisms but that is often not the real issue at stake and it is more so in Palestine ... Like in sub-Saharan Africa and our research, this whole thing about water reform obfuscates the fact that you need more water infrastructure, you need more access to water, you need to develop water for local people and local needs as opposed to other people's interests and needs ... you have a unique case with Palestine where the bottom line is that it is a situation of occupation".*  
(Extract from an Interview with Professor Lyla Mehta, November 2015)

However the consideration of human rights and the political processes remain outside the scope of the research. Rather, this chapter will draw on social learning theories

that are argued in the educational literature to support processes such as democratic participation and capacity building towards sustainability in water interventions and water resource management. This is deemed important in order to further explore the key issues that emerged from this research and to develop an understanding of how community-based water interventions might be better approached to meet the needs of marginalised groups from a learning perspective.

## **6.2 Whose knowledge? Whose learning? A social learning perspective**

Social learning has become an umbrella term that means many different things in different contexts. There are a number of terms in use that describe similar processes but have different conceptual roots in relation to the role that learning can take in society. This section will identify different aspects of social learning that all belong under this umbrella, in the context of community-based water resource management. A social learning perspective has been chosen as it focuses on the learning of all those involved in water interventions and is argued to value multiple and diverse knowledge systems (see Keen *et al.*, 2005). These aspects of social learning are particularly important in relation to this research due to the social and environmental justice issues that have been described in the context of the OPT. Although this section sets out the range of different terminology that is employed when discussing the concept of social learning in the context of community-based water resource management, the common concerns that link these terms is also highlighted. Following the introduction to social learning, a number of other perspectives of learning are discussed that are evident in the water-related and development literature. These contrasting perspectives of learning help to clarify the discussion around whose knowledge and whose learning are considered in the social learning perspective that this thesis takes.

A spectrum of theories are described in the social learning literature related to water resource management and environmental management, which share some critical rhetoric and ideas relating to learning processes (Cundill and Rodela, 2012; Reed *et al.*, 2010). There is convergence around the idea that learning is situated in social practice, where understandings emerge through social interaction and dialogue. This is captured in the environmental management literature as a way to widen individuals' and groups' awareness of multiple perspectives and interests beyond their own (e.g. Keen *et al.*, 2005). Knowing and learning then become located in the process of participation and collaboration. All stakeholders are considered to be learners in water resource management or in the broader context of environmental management (Armitage *et al.*, 2008; Muro and Jeffrey, 2008). Accordingly, the term co-learning is often used in relation to social learning to capture the learning that results from engagement and dialogue between individuals and groups, detaching itself from the narrow conception that learning is an outcome of teaching. For example, Cundill *et al.*, (2014: 3) argue that 'everyone involved needs to embrace a concept of co-learning ...' so that learning goes

beyond the individual to become situated in what Wenger (1998: 86) describes as communities of practice:

'The development of practice takes time, but what defines a community of practice in its temporal dimension is not just a matter of a specific minimum amount of time. Rather, it is a matter of sustaining enough mutual engagement in pursuing an enterprise together to share some significant learning'.

The term co-learning is employed in this thesis alongside social learning, as it best expresses the idea of a more collaborative and deliberative learning process. Social learning processes will be discussed in section 6.3 of this chapter.

In social learning theory, learning is contextually embedded and committed towards the representation and agency of marginalised groups through socially critical praxis (e.g. Lotz-Sisitka, 2012; Lotz-Sisitka and Burt, 2006). The development of socially critical praxis is associated with Freire (1972) who argued that learning should liberate individuals by increasing their awareness of the dominant ideologies that structure their social reality. Socially critical education theory argues that the role of education and learning should be to challenge unjust social structures and to transform our social reality (Burt *et al.*, 2014a). According to socially critical praxis, learning is understood as a process of change as new understandings prepare and direct learners towards action. As Fien (1993: 73) argues, it 'unites theory (beliefs) and action (practice)'. Socially critical praxis has a number of implications for organising strategies for learning as it requires both the facilitator and learner to engage in reflexive action. Fien (1993) describes this as a collaborative process of inquiry and action that involves understanding one's own personal values and interests in relation to an issue as well as understanding how others perceive the issue and the values and interests that sustain their positions.

Transformative social learning paradigms encompass transformative learning (e.g. Mezirow, 2000) and adaptive learning approaches (e.g. Sinclair *et al.*, 2013; Folke *et al.*, 2002). These are frequently associated with adaptive environmental management or environmental co-management, which draw on systems thinking and adaptive learning, emphasising experimentation, monitoring and action. Co-learning is argued to be necessary for building adaptive capacity and resilience towards sustainable ecological and social systems. In the context of environmental co-management, stakeholders are argued to seek to collaboratively understand and manage change through dialogue and negotiation (e.g. Armitage *et al.*, 2008). Through this process, individuals and groups are exposed to other perspectives and knowledge in order to expand their understanding of the human and nature relationship and interactions (e.g. Gleitsmann *et al.*, 2007). As part of the dialogue and negotiations, learners are required to critically assess their assumptions and the assumptions and meanings that others communicate:

'Transformative learning refers to the process by which we transform our taken-for-granted frames of reference ... to make them more inclusive,

discriminatory, open, emotionally capable of change, and reflective so that they may generate beliefs and opinions that will prove more true or justified to guide actions. Transformative learning involved participation in constructive discourse to use the experience of others to assess reasons justifying these assumptions, and making an action decision based on the resulting insights'. (Mezirow, 2000: 7-8)

While many of the perspectives that were reviewed in the social learning literature include a similar action-oriented approach to transformative and adaptive perspectives, they emphasise agency for social change and collective action (e.g. Cundill *et al.*, 2014; Buchy and Ahmed, 2007). Co-learning approaches value and seek to realise human capabilities in order to move towards sustainable development and social justice. This often involves the intentional promotion of certain core values that are associated with sustainability (e.g. Glasser, 2007). However, it is conceivable that the determination of these core values themselves would need to be mediated by the context and varying interpretations of sustainability.

Critical reflective learning is centrally placed to promote equity and to build agency (e.g. Lotz-Sisitka and Burt, 2006). Again this reflection on the structures and practices that constrain action and change, represents a 'commitment towards challenging the status quo in social learning' (Lotz-Sisitka, 2012: 48). Accordingly, many of these social learning approaches share action research and participatory learning methodologies, with the intention to improve decision making through building relationships as well as the capacity of stakeholders (Cundill and Rodela, 2012). It is the focus on supporting a broader agenda of social change that is argued to distinguish the nature of participation in social learning approaches (Burt *et al.*, 2014a). However, Reed *et al.*, (2010) warn against the conflation of social learning and participation, arguing for greater clarity and distinction between learning processes and outcomes. This recommendation is made in light of arguments inimical to the assumption that participation is itself sufficient to achieve a more equal and just redistribution of power to marginalised groups and to surmount structural constraints (Reid *et al.*, 2008). Similarly, the relationship between knowledge and action has also been criticised for being too simplistic in the social learning literature. Whether or not this criticism is accepted, it has encouraged researchers to explore the learning processes that contribute to meaning-making in the social context of practice.

In contrast to the social learning perspective, there is a long tradition of '*learning from*' local people and the local context in the broader development and natural resource management. This was in part, a response to ahistorical and apolitical forms of development (e.g. Chambers, 1997; Chambers *et al.*, 1989,). Local knowledge can be instrumental in guiding planning and policy, in supporting vital coping strategies and in identifying local needs and priorities (Cheng and Mattor, 2010; Jabeen *et al.*, 2010). However, the assumption that local knowledge can redefine power relationships when utilised during interventions has been challenged, where the problem-definition,

objectives and outcomes are predetermined by the donor and NGO (e.g. Mosse, 2001). Participation in such instances is characteristically instrumental. For example, in the needs assessments that were observed during the fieldwork, information was gathered in order to identify beneficiaries of water interventions according to criteria specified by donors for awareness raising, disseminating information and training that support NGO project aims. Local people were specifically questioned during these needs assessments about daily water use, hygiene and sanitation practices. Information dissemination is frequently favoured following these assessments as a practical and efficient way to achieve donor objectives, whether '*to improve the knowledge and skills on hygiene issues*' (Document 5 Project Report by the case study NGO), or to enhance local understanding of specific water conservation measures. While this information is valuable and instrumental participation may be appropriate at certain times during an intervention, in this instance without opportunities for local participants to exchange knowledge and to influence the design process (for example in relation to the objectives of the intervention), project learning might be expected to be limited.

An alternative view would suggest the need for NGOs to participate in the lives of local people, especially marginalised groups, and for a more exploratory, emergent intervention process (Vare, 2008). A major challenge to any such alternative process are the prescriptive models of what can be funded that the research has observed to constrain action in the OPT as well as donors' low tolerance of risks and uncertainties and short time frames. All of these factors have been argued by NGOs with experience of working in the OPT to fail to support alternative approaches that are most needed and to challenge the occupation.

Many of the case studies in the literature review on community natural resource management and development (Chapter 2), focus on '*learning by*' the beneficiaries of programmes according to the dominant discourse on learning that promotes the acquisition of knowledge and skills or changes in attitudes (e.g. Van den Berg *et al.*, 2011; Conservation International's Freshwater Strategy, 2010; Garande and Dagg, 2005). The learning outcomes of designated water-related interventions is the explicit focus of the case study NGO. This results from their understanding of the water issues, their solutions and the political context (including the involvement of multilateral donors). The purpose of '*learning by*' community members is for them to obtain the information and skills to address the social and environmental issues in relation to localised water shortages, such as improving hygiene and sanitation practices and water conservation techniques in the household. Learning is understood by the case study NGO to be a process that participants engage in through awareness raising programmes (e.g. the cause and effect relationships between wastewater and groundwater contamination), and training workshops (e.g. point water treatment using water filters). The primary role of the participant in these programmes is to take part and to effect these changes in their daily water practices. Scientific or expert knowledge is valued in this process and the NGO believes that as a result of gaining

this knowledge, local people can better understand how their actions impact on the water system and their health, and how they can benefit from water conservation techniques and measures:

*"We introduce them to better irrigation techniques, different from using the open tap. When I return I want to look out and see all fields green. If it is not, then the person pays back all money ... The donor may give the most, the [case study NGO] gives money and expertise and the village council or CBO give money, time or labour".* (Representative D, Engineer and Educator for the case study NGO)

These non-formal learning programmes have considerable value and are reported to have led to improvements in health and water conservation (Document 5). However, within the structured non-formal learning programmes, some participants do negotiate opportunities to share their practices and experiences and a social learning approach is evident. Where space is provided for local people and NGO field staff to share their knowledge, and when this is facilitated by the NGO, there are opportunities for participants and field staff to encounter new ideas and knowledge:

*"So now this project, we have nearly finished the needs assessment. We haven't written the report yet, but the initial findings, an important finding, is the sustainability of the project, people suggested mainly a sustainable project like income generating assets, small businesses but we found few needs for infrastructure (which donors often think we need) and to work with communities in a way that supports them to rely on themselves more and not rely on humanitarian aid ... this concept of what we could do ourselves without the donor or NGO to interfere ... They emphasised sustainability and they requested things related to their skills, related to their social connections ... They emphasis on agriculture, we work with rural communities, water was a problem definitely. But we are surprised in some communities, they have agriculture on roofs, this is something that NGOs should learn from. They are really experienced, they are surprising us with innovation they have. We are supporting them to be self-reliant and to support their own initiatives ...".* (Palestinian Representative G of an International Humanitarian NGO)

The above example recognises that learners bring their own knowledge and experience, which strategies such as information provision and behavioural focused perspectives of learning can overlook. As previously described, it is a social process that everyone becomes involved, in the co-production of knowledge:

*'... the learning should flow in all directions, and facilitators must recognise and embrace their personal need to learn as well as to share knowledge'. (Cundill et al., 2014: 3)*

The social learning approach provides support for the integration of local knowledge and understandings of water in the process of identifying and addressing water issues. The approach has the potential to re-politicise water-related development if social



equity and sustainability are deemed important, in relation to the explicit focus on power relations and the participation of marginalised groups (Lotz-Sisitka, 2012). When learning is framed in this way, NGOs then have an obligation to develop more reflexive practice, particularly around power dynamics and their own learning. This is deemed important in the OPT where representatives from Palestinian NGOs argue that their accountability to local beneficiaries is often compromised by financial dependence on bilateral and multilateral donors and the need for political support from the international community.

When Chambers (2005) asserts that NGOs must learn how to learn, he is suggesting that participation is itself a learning process, during which individuals need to be supported to develop a range of skills associated with negotiation, dialogue and reflexivity. Movik and Mehta (2009) argue for a more collective approach to address water and sanitation issues that requires all involved to be reflexive, for example in the analysis of how the problem is identified locally, how decisions are made and the assumptions that guide the decision-making process. However, they recognise that such an approach will need appropriate institutional frameworks that enable the sharing of knowledge and innovation. The local capacity to participate will also need to be facilitated and it is often argued that NGOs are ideally situated to build this capacity (e.g. von Koppen *et al.*, 2006). In light of the intra- and inter-community tensions that the fieldwork highlighted, the capacity for local conflict resolution should also arguably be included, even though the social learning literature does not typically discuss this.

Social learning approaches have the potential to support a more deliberative approach to designing and implementing water interventions, in which local perspectives and knowledge are valued amongst other diverse forms of knowledge and understandings. Furthermore, some NGOs are positioned so that they can connect communities and other local stakeholders to what Buchy and Ahmed (2007: 362) term 'upwards stakeholders' - NGOs can be a 'learning link'. This is deemed important in the context of the West Bank where decision-making in the water sector has become centralised and where *"spaces need to be created to enable coalitions between sympathetic stakeholders"* (extract from an Interview with Professor Lyla Mehta, November 2015), to subvert dominant narratives. An example of such an approach is offered by Thompson *et al.*, (2007: 133-134), working in the context of sustainable development in Nepal. Here, they observe a similar proliferation in environmental and development NGOs, each with single problem-definitions which have differing implications for local people and the environment. They describe the need for a learning process that supports dialogue and enables 'expertise to flow from the bottom up' in order for international organisations in particular, to work with the 'framework' of local communities and to enable greater adaptability in the face of change and uncertainty:

'Learning - readjustments in systems of knowledge - then takes place. Nature, in effect, forces the different systems of knowledge that are promoted by the different institutions into conversation with one another. The present



challenge, we argue, is to convert that conversation from monologue to dialogue: to modify the explicit and global science of the international agencies so that it can take some account of the implicit and local knowledge of the villagers'. (Thompson *et al.*, 2007: 133-134)

However, the view that the objective of social learning is 'to learn about complex issues in an inherently conflictual environment' (Cundill and Rodela, 2012: 10) is not always represented in empirical studies that are concerned with reaching a common understanding of the problem-definition in environmental management (e.g. Van der Wal *et al.*, 2014; Cheng and Mattor, 2010). Scott and Gough (2004) argue that the assumption that a consensus about the solution can be reached is problematic, when different groups may share an interest in seeing an issue in a certain way. Furthermore, it could be questioned whether a process that reduces diversity and complexity to a single problem-definition is desirable. This is especially significant when power asymmetries risk a single problem-definition being imposed or when uncertainty means that all available problem-definitions depend upon untestable and / or contestable assumptions. Rather, Burt *et al.*, (2014a) argue that the assumptions behind each problem-definition should be explored, recognising that trade-offs may be inevitable in this process. The process requires the on-going cultivation of equality and a commitment to an inclusive and connective process of gathering the information that informs water interventions (Cundill *et al.*, 2014).

In a review of participatory practice in Integrated Water Resource Management (IWRM) in South Africa, Lotz-Sisitka and Burt (2006) recommend the need for mechanisms to ensure a balance of interests and to facilitate cooperation as well as capacity building, education and information sharing to address inequalities in access. The report specifically supports the identification and inclusion of marginalised groups and strategies to accommodate local culture, practice and knowledge. Although from a social learning perspective, learning involves respecting and valuing local meanings, Measham and Baker (2005) maintain that the process must also support people to move beyond the boundaries of their interests and understandings and introduce them to alternative ways of doing things.

### **6.3 Developing agency and building capacity: the processes and outcomes of social learning**

As described in section 6.2, social learning involves the exchange of knowledge and perspectives in a reflective process that can confront individuals with different ways of defining issues and challenge their assumptions about the world (Burt *et al.*, 2014a; Cundill *et al.*, 2014; Muro and Jeffrey, 2008). Learning is frequently perceived as a change process as it is argued to support the development of new meanings and understandings, improve learners' decision-making capacities and develop agency (Armitage *et al.*, 2008).

Much of the social learning literature distinguishes between different but interrelated levels of learning (e.g. Cundill and Rodela, 2012; Reed *et al.*, 2010; Glasser, 2007; Keen *et al.*, 2005). Single loop or first order learning and double loop or second order learning are often explicitly linked to Argyris and Schön's (1996) organisational learning theory, which envisaged the need for an adaptive and responsive process of learning for innovation and change:

'Organization learning occurs when individuals within an organization experience a problematic situation and inquire into it on the organization's behalf. They experience a surprising mismatch between expected and actual results of action and respond to that mismatch through a process of thought and further action that leads them to modify their images of organization or their understandings of organizational phenomena and to restructure their activities so as to bring outcomes and expectations into line, thereby changing organizational theory-in-use. In order to become organizational, the learning ... must become ... embedded in the organizational environment'. (Argyris and Schön 1996: 16)

Single-loop learning, defined as 'instrumental learning' (Argyris and Schön 1996: 20), can result in changes in strategies or actions and the assumptions behind them but the values and norms remain unchanged. For example, hygiene programmes in WASH can focus on learning from the consequences of certain actions, linking the disposal of untreated wastewater to poor water quality, with the intention to bring about behavioural changes. Armitage *et al.*, (2008) provide an example of an NGO-led intervention process whereby the NGO reviews stakeholders interests but themselves propose a series of options as an outcome of the discussions. Sterling argues that this learning maintains or accommodates existing objectives and ways of seeing things - the idea of doing more of the same but doing it better (Sterling, 2001: 28).

Double-loop learning involves 'doing better things and seeing things differently' (Sterling, 2001: 28), in a process whereby individuals reflect on their own values and the assumptions that underlie their actions and the actions of others. The double-loop refers to two feedback loops that connect observations of the effects of actions to certain strategies but also to values and norms (Argyris and Schön 1996). Returning to the example given by Armitage *et al.*, (2008), double-loop learning would involve the NGO questioning the values that underlie their methodology and subsequently linking this to intervention outcomes. Sterling (2001: 7) encapsulates double-loop learning in the term 'reformative' learning as it involves critical reflection. Reflection is central to the process according to Reed *et al.*, (2010), as it is only when individuals reflect upon their experiences, reinterpret knowledge through social interactions and examine the assumptions behind their understandings that the underlying norms and values can be challenged.

Social learning then demands a multiple-loop or in the words of Sterling (2001), a transformative learning process. It engages learners in constructing and owning meaning. Agency is argued to emerge from this meaning-making process in multiple loop learning when individuals are involved in discussions, actions and reflections that make a difference to the practices that they value (Lotz-Sisitka, 2012; Mezirow, 2000). Advocates of social learning in water resource management emphasise the importance of supporting human agency alongside technical solutions. This process requires facilitators to focus on the existing practices as well as the perspectives and values that learners hold but with the intention of building on these with the introduction and mediation of other knowledges of practice (e.g. Burt *et al.*, 2014a). Social learning research observes an improvement in the decision-making capacity of learners, through developing new knowledge, skills and understandings in addition to building social relationships (Cundill *et al.*, 2014; Muro and Jeffrey, 2008). In relation to agency, capacity building is understood to be essential so that participants can take part in social practices and self-organisation, such as those required in water interventions and water resource management. This is argued to be fundamental in rights-based approaches, as capacity building provides a way to challenge and potentially redefine relationships between individuals and groups and state and non-state actors (e.g. Filmer-Wilson, 2005).

Furthermore, by supporting the process whereby people acquire new skills, knowledge and understandings in order to participate in social practices, social learning is argued to transform identity (Wenger, 1998). For example, capacity building can help to change the way individuals and groups understand their rights and their ability to make decisions. Wenger (1998: 215) conceptualises learning as a process of becoming, which is an ongoing and integral part of the lives of individuals and groups:

'Because learning transforms who we are and what we do, it is an experience of identity'.

Based on the work of Lave and Wenger (1991) on situated learning, Wenger's (1998) theory extends the experience of identity to communities of practice, where participation and learning are realised in the formation of community and in the production, negotiation and reproduction of identities. It is through participation that individuals are argued to mutually shape each other's experience of meaning. Wenger (1998) argues that meanings are negotiated so that engagement in the learning process is meaningful. Understanding learning in relation to participation in a community, practice and identity, is helpful when thinking about how NGOs can support a co-learning process in water interventions. Intervention processes need to be based on the participants' personal experience of the context and enable them to make decisions that engage with their own knowledge and skills, while involving all stakeholders in discussions and reflections that allow a negotiated response to the issues (Buchy and Ahmed, 2007; Andrew and Robottom, 2005). This process is likely to involve learning by NGOs if they are responsive to the evolving dialogue, for

example adapting their (re)presentations or developing their understanding of an issue. In the context of the West Bank, the actions that emerge from a co-learning process may still be constrained but the restrictive circumstances should not negate the importance of experiences that allow local people to take ownership.

While social learning theories understand learning as an ongoing part of our lives, which can involve learners in the organisation of this learning (e.g. Wenger, 1998), mediation is understood to be central to participation and capacity building:

'... it is in the detailed mediation interactions that real participation occurs as people engage with each other and more experienced others, to form new knowledge and capabilities for action in relation to their existing contexts and practices'. (Burt *et al.*, 2014a: 11)

The research by Burt *et al.*, (2014b) explored learning for local participants in water resource management in addition to the processes of learning for NGO and CBO staff who are involved in mediating the process. Mediation is understood in the social learning literature as a process of interaction that connects different ways of knowing, knowledge and practice. According to Burt *et al.*, (2014a: 13) the process may involve a facilitator and learning resources or mediation can be more 'implicit' through culture, history, values and beliefs. This understanding is based on Vygotsky's (1978) cultural historical theory of learning. Whether mediation is 'explicit' or 'implicit', as described by Burt *et al.*, (2014a: 13) they conclude that the learning process must be built on existing water practices, and dialogue between practice and other forms of knowledge. The researchers collected detailed accounts of rainwater harvesting in order to identify local needs and knowledge gaps. Questions were then generated from listening to local accounts and local specialists were involved in verifying knowledge in relation to these water practices. Subsequently, learning resources were designed around the 'practice-centred questions', to mediate the learners' prior knowledge and to provide access to new knowledge (Burt *et al.*, 2014b: 48). It is important to highlight here that although mediation is related to the local context of practice, it is not necessarily limited to this context. This is deemed important if learners are to be introduced to different ways of seeing the issues and alternative ways of doing things (Scott and Gough, 2004).

Research such as this by Burt *et al.*, (2014b) is also important in relation to objections to the assumed relationship between knowledge and action that is evident in the expectation of change-oriented action in the social learning literature. Cundill and Rodela, (2012) argue that there is poor empirical support for this relationship. In response, Burt *et al.*, (2014b) and the work by Lotz-Sisitka (2012) suggest that further research is required to understand the complex social learning processes that are involved and the contextual factors, including power relations that play a role in determining outcomes.

Learning is also part of the process for the mediator, as they are required to work with diversity and be responsive to the issues and questions as they arise so that learners can begin to address any contradictions that they are confronted with (Daniels, 2005). Mezirow (2000) recommends that facilitators adapt to the participants own meanings but also encourage a greater awareness of the context of the diversity of ideas and the assumptions behind them. Buchy and Ahmed (2007) maintain that the facilitator must also engage in such critical reflective practice as well as encouraging participants in this process, particularly around dominant discourses and power relations. This is important as the power dynamics of evolving relationships often receive less attention in examples of social learning research.

Further research may help to understand how NGOs envisage the process of learning and the differences between how NGOs and communities learn in order to design strategies for co-learning in the context of water resource management. For example, the case study NGO in this research understands learning as a more linear process of knowledge transfer while there were examples of experimentation with different plants and methods of rainwater harvesting in some communities, more typical of cyclical models of learning. Social learning processes and mediation by NGOs is also described as a long-term engagement with communities. This will require greater discussion in relation to the demands that such learning places on NGO practice and the challenges that inhibit co-learning. For example, NGO staff in the West Bank discussed how learning can be significantly structured and limited by short funding cycles and externally prescribed objectives. The physical distance between donors, NGOs and communities can also contribute to poor knowledge flows:

*"Another realisation from evidence across NGOs and in some recent research that we have been doing, looking at what practitioners have said regarding development and what really works, related to picking up on the technologies and practices that existed or were effective within the community before the disaster or conflict. This is something we need to pick up on and learn from ... Some of the forgotten technologies need to be piloted and you need to involve all stakeholders in operational type research". (Extract from an interview with the Global WASH Advisor for Tearfund, November 2015)*

However, co-learning requires commensurate powers and resources for marginalised groups to participate in decision-making and grassroots action, whereas in reality, power is being centralised in the current process of water reform in the West Bank. In this context where donors are focusing on governance, there is a need for greater awareness of the processes and structures that effect policy and the desired outcomes of donor programmes (Cleaver and Franks, 2008).

## **6.4 From theory to practice**

Whether through multi-loop learning or communities of practice, social learning processes are argued to promote greater inclusion and connectivity in the process of collecting and analysing information that subsequently shapes water interventions. The co-production of knowledge has also been argued to redress dominant knowledge flows from the top-down to ensure that marginalised groups have access to knowledge that can help to address local water issues but can also inform intervention processes. The importance of mediation for capacity building has also been discussed so that people can engage in dialogue with a diversity of perspectives concerning the problem(s) and solution(s), contextualise these understandings and draw meaning from the process. Agency is argued to emerge from this learning process where reflexivity is encouraged.

The following case studies provide insights into the role of learning in current NGO practice in relation to their accounts of water and sanitation interventions from the second phase of semi-structured interviews, detailed in Chapter 3. The water interventions are unique to the context within which they are discussed but provide useful insights into learning processes and how the focus on who learns or the purpose of learning can predispose the nature of the process and its outcomes.

Case study one describes the work of a researcher and NGO practitioner at the Environmental Learning Research Centre in South Africa who is involved in the centre's research into social learning and transformative agency in the context of integrated water resource management. The participant's work contributes to a wider research project that is exploring how educational institutions interface with community knowledge and learning processes, in order to inform social learning outcomes in relation to strengthening capacity building and agency. Case study two focuses on an Israeli NGO that works with communities and other organisations in the OPT and Jordan in addition to international researchers. The Centre for Transboundary Water Management at the Arava Institute focuses on integrated water resource management and policy in the Middle East. They are currently coordinating a transboundary water basin management project that aims to explore conflict and cooperation in river basin management in the region. The interview is centred around the Institute's work in mitigating transboundary wastewater conflict in Israel and Palestine. The final case study examines the work of the international NGO Tearfund, and the current global water discourse that shapes their approach to community water interventions. Tearfund has experience of working in the context of conflict in water and sanitation and in policy, supporting the alignment of donors behind accountable actions by partners in national governments, NGOs and other organisations. The accounts provide insights into the discursive and structural challenges that inhibit co-learning processes in water interventions as well as how some NGOs can situate themselves to build local capacity for greater co-determination of outcomes.



*Case example 1 - The Environmental Learning Research Centre, South Africa*

Tichaona Pesanayi, a researcher and NGO practitioner in community water resource management, describes a learning approach to address water shortages that emphasises a deeper contextual analysis than some of the other case studies and literature. The practitioners sit down with farmers and listen to their accounts of water practices in order to understand "*the historical development of water issues*" and "*traditional wisdoms*". Learning is understood as a process of change that aims to strengthen agency and facilitate dialogue and capacity building against a historical background of "*social injustice ... linked to the Apartheid era in South Africa*". The approach is rooted in cultural historical activity theory due to the focus on agency which is understood to be historically and materially situated (Lotz Sisitka, 2012):

*"Sometimes you find that those who are intervening like government extension workers and NGOs, [they] are not thinking about the history of displacement that are happening to people where they can't continue to do what they used to do. The kind of readymade solutions that they bring without working with the farmers ... there has been a history of dependence with outsiders bringing their knowledge". (Extract from an interview with Tichaona Pesanayi, October 2015)*

In terms of methodology, this means creating opportunities for local farmers to think, reflect and plan together. The learning approach aims to facilitate discussions that go beyond the problem-definitions that participants initially identify by bringing together the different knowledge and understandings of a number of stakeholders, including government extension workers, agricultural colleges and community-based organisations:

*"A learning approach is I think better than some of the other ways of doing interventions, as in these other interventions there is not enough dialogue to come up with solutions to there not being enough water [for agriculture] ... So in the first workshops that we did with farmers, they wanted to look at the borehole but there needed to be a more affordable solution. So we looked at other options, including rainwater harvesting ... they used to use a system of farming called Gelesha, which is a traditional farming method where you lift the soil in the winter after the crops are harvested and leave crop residue in the soil, which helps to retain the moisture. So we looked to build on what they know but introduce them to a wider array of rainwater harvesting technologies ... people already collect rainwater for drinking in a tank but were not familiar with using rainwater for agriculture". (Extract from an interview with Tichaona Pesanayi, October 2015)*

The practitioners recognised that the local agricultural college was focusing on an entirely different problem-definition concerning water shortages and agriculture. Consequently agricultural extension workers were learning about water conservation in relation to conventional irrigation methods as agricultural issues were perceived to be the result of poor infrastructure and a lack of knowledge:



*"So they train extension workers who cannot help poorer farmers and they don't know the other alternatives of technologies ... the curriculum is focused on the big scale technologies ... so with the college we look at the curriculum and how it can help the farmers to respond to the issues that they are facing ... I ran 'change laboratories' ... where you look at the history, the present and the future around an activity system. So you look at rainwater harvesting as the activity system for example, in the community, in the agricultural curriculum ... It is a good way to question current practices and to start to model solutions together, then testing these and then to look at what is possible in the particular context". (Extract from an interview with Tichaona Pesanayi, October 2015)*

This description captures the idea of a cyclical learning process during which, knowledge for water resource management is co-produced. All participants were encouraged to reflect on the problem-definition and its assumptions while being introduced to other ideas and understandings about water practices and agriculture. This led to an exploration of alternative options, new responsibilities and relationships and the acquisition of new knowledge and skills around rainwater harvesting as well as in problem solving and deliberation. Participants reported that they were then able to assess and achieve what they identified themselves as prioritises for learning. In this way, the learning process introduces people to new ways of thinking, strengthens their agency and increases ownership of the issues that affect their lives. Tichaona Pesanayi maintains that *"people continue to learn how to develop ideas ... so the intervention will not be the end ... there will be other problems and they can use the same process and the network to continue to solve them"*.

#### *Case example 2 - The Arava Institute, Israel*

The account of water and wastewater issues in the region given by the Director for Transboundary Water Management at the Arava Institute, centred around sustainability and in depth knowledge of the conflict-context, similar to the narratives of the case study NGO and Palestinian NGOs. However, the Institute deviates from these narratives in their understanding of water and wastewater issues as transboundary issues that require processes and actions at a number of scales beyond the local:

*"The general area that we are focusing on now is wastewater management issues between Israelis and Palestinians, specifically trying to address the lack of large scale infrastructure in the West Bank, which impacts Palestinians directly and impacts Israelis indirectly ... The environment is being impacted by both ... specifically we address the issues in a number of ways; the technical way where we work with Palestinian partners to provide onsite wastewater treatment and reuse in Palestinian communities and then ... we work in a broader field to encourage dialogue between Israelis and Palestinians on how to resolve issues. We also promote policy*

*options, opportunities for how to address the issue and to engage as many stakeholders as possible". (Extract from an interview with the Director for Transboundary Water Management, November 2015)*

While recognising the impact of the occupation on water and wastewater services, the Arava Institute also defines the water issue in terms of processes at other levels. They discuss governance failures within the West Bank, including the absence of local institutions and resources for water resource management, donor dependency and the focus of donors on centralisation, which fails to take into account the historical political ecology of the region:

*"Focusing on the wastewater question, there are two main avenues to addressing it. One is the conventional way that wastewater is managed which is centralised and very much driven by large scale infrastructure. For example in Israel ... the government has the financial resources and governance structure ... we have compliance and enforcement to do all of these things and this enables the technology to work for the benefit of the people. In the Palestinian reality, it is completely different ... and is not going to work, at least in the current situation, because of this fragmentation of jurisdiction. But the donors have been pushing that and it's not going anywhere. Here again, I think the PA needs to change its way as it is only too happy to take all this money but it hasn't gotten us anywhere as people on the ground are still not receiving services". (Extract from an interview with the Director for Transboundary Water Management, November 2015)*

The Arava Institute argues that as long as the wider structures and unequal distribution of resources continue, it is unlikely that interventions that focus on centralised management and practice in water and sanitation will result in beneficial outcomes for local communities. Rather it adopts a perspective that NGOs must work with these problems in order to find alternative solutions. The Director for Transboundary Water Management argues that the Institute *"accepts that this is how it is and it's not going to change anytime soon"* but *"there are ways that you can try to get around there massive political barriers and our approach is to consider decentralisation"* (Extract from an interview, November 2015).

Listening to local communities' accounts of water shortages and the links to food insecurity and the loss of livelihoods, the Institute explored the use of small-scale appropriate technology that would allow the onsite treatment of grey wastewater as a way to increase water supply for households. Technical knowledge is transferred from Israel and Israeli engineers are encouraged to work with local communities to construct gravel bed systems using local materials. Palestinian farmers also attend field visits in Israel to develop their knowledge of the technology and the adaptations that are required when using grey water to irrigate crops. This is argued to allow knowledge exchange as Israeli farmers have a long history of using treated wastewater for large scale agriculture. It is also described as a way *"to bridge communities"*. Peer

learning is facilitated by individuals who have adopted these systems, both within and between communities in the West Bank, in an effort to address the isolation of rural communities. Due to the vast physical distances between villages and the restrictions to their movement across the West Bank, many communities are otherwise unable to access such knowledge and expand their understanding of alternative options to manage water shortages.

The Arava Institute also maintains that NGOs need to act as a learning link to the local and national government about this alternative dialogue to centralisation as well as between communities, the NGO sector and their donors. This is perhaps even more important considering the findings that few local people expect the government to be accountable to them and depend on NGOs for water and sanitation services. The visibility of NGOs and international agencies has been observed to not only affect community mobilisation but may also further undermine state-society relations:

*"The way we talk about bridging the divides is that the environment is a great setting to bring people together, to share their experiences and to discuss problems and solutions. When we do dialogical sessions, it's all about bringing people together around a shared issue ... that's the jumping off point to create better relations".*  
(Extract from an interview with the Director for Transboundary Water Management, November 2015)

Although the Institute explores local water practices and issues with the communities, which has informed the problem-definition, they recognise that the learning process could be expanded to include NGO learning with more reflexive practice and monitoring. Participant learning currently takes place through training, field visits and knowledge exchange and is typically more didactic. Social learning is reasonably assumed to occur through the dialogue between communities and joint actions in the construction of wastewater treatment systems. While increasing farmers' knowledge and skills in the use of this technology, the process is also argued to increase the participants awareness of the environmental issues and builds relationships between communities. However, as the technology is transferred from Israel, the role of local knowledge is less apparent in the choice and design of the technology. Strategies such as mediation could potentially accommodate local culture and practice to a greater degree alongside technical knowledge. For example, a facilitator could encourage discussions around household coping strategies, including the existing use of grey water, through questions that draw attention to local priorities, problems and resources. This seems important in order to strengthen local ownership and agency, and for the sustainability of access to water for food production and related livelihoods.

*Case example 3 - Tearfund, Community-led Total Sanitation*

Although Tearfund's WASH interventions are a humanitarian response to ongoing emergencies, the relationship between community ownership, mobilisation and sustainability is described as being central to their work:

*"I know that the upfront supply responses are critical but we do always try to see the long term sustainability if we can ... We are always looking to non dependency outcomes ..."* (Extract from an interview with the Global WASH Advisor for Tearfund, November 2015)

Many of the processes in Tearfund's demand-led approach to WASH are essentially social learning and practice-orientated learning. Rather than approaching interrelated water, sanitation and hygiene issues with a predetermined package of technology and information provision, the demand-led approach examines pathways that are responsive to the local context and can lead to more sustainable and equitable outcomes. They recognise that technological choices have cultural, social and material implications that can affect the outcome of interventions.

It has been argued in this research that the process of gathering the knowledge that informs decision-making is central to participation and agency when local knowledge and a diversity of perspectives inform this process. This is evident in community-led total sanitation. The community analyses their local sanitation situation and collectively identifies the priority issues. The facilitator is central to this process as it is through discussions of local sanitation practices and methodologies such as transect walks and mapping, that participants are made aware of the health issues of open defecation and where there is a risk of contamination of water sources. Although behavioural change is a component of this intervention to reduce the practice of open defecation, it is a change-orientated approach that communities have to collectively determine through discussion, problem-solving and reflection. Evidence of collective action as an outcome of this approach is discussed in various case studies (Greaves, 2010).

Although the NGO provides technical information, for example about the essential component parts of a latrine, good hygiene practices and safety, the community is encouraged to make linkages between local practices and problems and to identify any existing designs and local materials that could be used to construct their own latrines. The affordability of these designs and the availability of materials is argued to be essential for community ownership and mobilisation. Tearfund also considers it crucial to create partnerships with local government and local institutions for longer-term sustainability. Wild and Mason (2012) observe that greater collaboration and coordinated actions between governments, NGOs, international agencies and communities, can encourage contributions from a range of stakeholders to help with WASH delivery for longer-term recovery where capacity building is also supported.

Essentially, interventions must be responsive to local people's needs through a two-way dialogue and the community must have ownership over their learning in order to identify what it is they need to know and to meet these needs. In a move away from didactic models, the NGO then becomes a facilitator of community mobilisation and partnerships, supporting local institutions or key individuals in the community who mediate between the NGO and the community:

*"In some countries, we emphasise the involvement of district level government, because they are the people that can see and make a difference and give permission. They can really endorse community responses especially when it needs to be done quickly. That's the key, especially where we don't have the donors on board ... Donors are reasonably happy to hear of activities such as putting in latrines that lead to quick behaviour change but they won't go on to consider say sanitation marketing afterwards, as that's not seen as saving lives". (Extract from an interview with the Global WASH Advisor for Tearfund, November 2015)*

Tearfund believes that the facilitation of a co-productive and collective approach also supports the resilience of communities, related to *'their ability to take the shocks and stresses of what is inevitably going to come in the future'* (Extract from an interview with the Global WASH Advisor for Tearfund, November 2015). Resilience is now entering the global discourse in the WASH sector, often being employed interchangeably with sustainability. Further research could help to identify how resilience is understood and how it can contribute to multiple dimensions of sustainability.

## **6.5 Learning, agency and sustainability in water interventions: A model**

The research findings have described how the conflict and conflict-related discourse can effect what is possible on the ground in terms of water services and delivery in the context of the West Bank. In particular, NGOs who operate in the West Bank argue that entrenched prescriptive models of what can be funded are not always appropriate to the approaches that are required and short funding cycles are understood to constrain the transition from emergency relief to development WASH programmes. With the ongoing intractable conflict in the region and long-term involvement of donors and NGOs, local people no longer expect the Palestinian Authority to be accountable to them and depend on emergency water interventions from NGOs as well as their own coping strategies to survive. The visibility of NGOs and international agencies has possibly also affected the Palestinian Government's priorities for service provision in the West Bank. The Director for Transboundary Water Management at the Arava Institute argues that these communities are neglected by their own government and are *"ignored by the Israeli government, which has no interest in them whatsoever other than for political insecurity reasons"* (interview November 2015).

The arguments for a social learning approach to support local participation, ownership and agency, to water intervention practice in the context of the West Bank, are not intended to negate the importance of multi-levelled actions to address water issues that are inextricable from political processes nor the narratives around water rights. Rather, it is recognised that communities and NGOs have to engage with the reality on the ground, with the everyday uncertainties and risk, in order to meet local needs. Local people have little choice but to find ways to move forward in an attempt to gain greater access to water, as water resources are fundamentally linked to their lives and wellbeing. There are examples of NGOs who acknowledge the constraints to water services in the West Bank but maintain that local agency needs to be supported in water practice and policy for longer term recovery. These NGOs observe the dominant approach of donors and other NGOs who maintain the narrative of the humanitarian crisis as effectively demobilising communities and reinforcing their lack of freedoms.

For example, while being critical of the effects of the Israeli-Palestinian conflict on Palestinian communities and the environment, the Director for Transboundary Water Management at the Arava Institute argues that in the face of the political situation that has seen no real change, NGOs have to work with the reality on the ground:

*"Let's say focusing on the wastewater question, there are two avenues to addressing it. One is the very conventional way that wastewater is managed which is centralised and very much driven by large scale infrastructure. In the Palestinian reality, it is completely different and the reasoning in my sense is why the conventional approach is not going to work ... at least in the current situation, because there is this fragmentation of jurisdiction, so centralisation cannot work when you do not have the ability to say where is the best place for this facility to be located. But the donors have been pushing that and I think it is wrong as it's not going to get you anywhere ... So my approach is that if that's the case, and the political situation is not going to change and may even get worse ... Here again, I think the PA need to change its ways as it is only too happy to take all this money for consulting and for drawing up plans and producing reports but ... people on the ground are not receiving services. There are ways that you can try to get around these massive political barriers and our approach is to consider decentralisation. That's really the bottom-up approach to say look, there are a lot of options to treat wastewater on site and not just to treat it onsite but to provide the benefits of the reuse of treated wastewater on site as well".*  
(Interview November 2015)

However, for the Arava Institute, the bottom-up approach needs to be complimented by joint actions at other levels wherever possible, through dialogue with local government, donors and the private sector. There is support in the literature from Gibson *et al.*, (2005) who observe the role that local and international NGOs can play in bringing local perspectives and knowledge to stakeholders at both national and international levels. The co-learning approach that has been discussed in this chapter,



demands that NGOs and other stakeholders are open to mutual accommodations that may require changes to problem-definitions and perspectives as well as tradeoffs between different goals. All of these stakeholders have different negotiating capacities so capacity building has to be integral to this process. This requires knowledge sharing in ways that can enable communities to understand and make decisions based on new information as well as training in conflict resolution in the context of this research.

The complexity associated with the issue of sustainable development, and the challenging learning agenda that it is argued to present, informs the work of Scott and Gough (2003: ix). In response to the complexity and uncertainty of many sustainability and environmental issues, they explore the inter-relationships between learning and sustainable development, arguing for engagement between diverse perspectives (Scott and Gough, 2003: 34). The authors draw insights from co-evolutionary theory, which argues that both society and the environment have the ability to initiate and respond to change, indicative, according to Scott and Gough (2003), of the capability of both to learn. For example, in adapting to environmental change through learning and action, societies can themselves initiate further changes in the environment. This can bring about both positive and negative change in relation to sustainable development. The emphasis on learning operates through supporting people to 'build personal and social capacity so that they, as learners and social actors, are enabled to grapple with the issues and relate them to their own lives and work, while at the same time appreciating and empathising with the perspectives of other individuals and institutions whose social context and the issues they face may well be quite different' (Scott and Gough, 2003: xv).

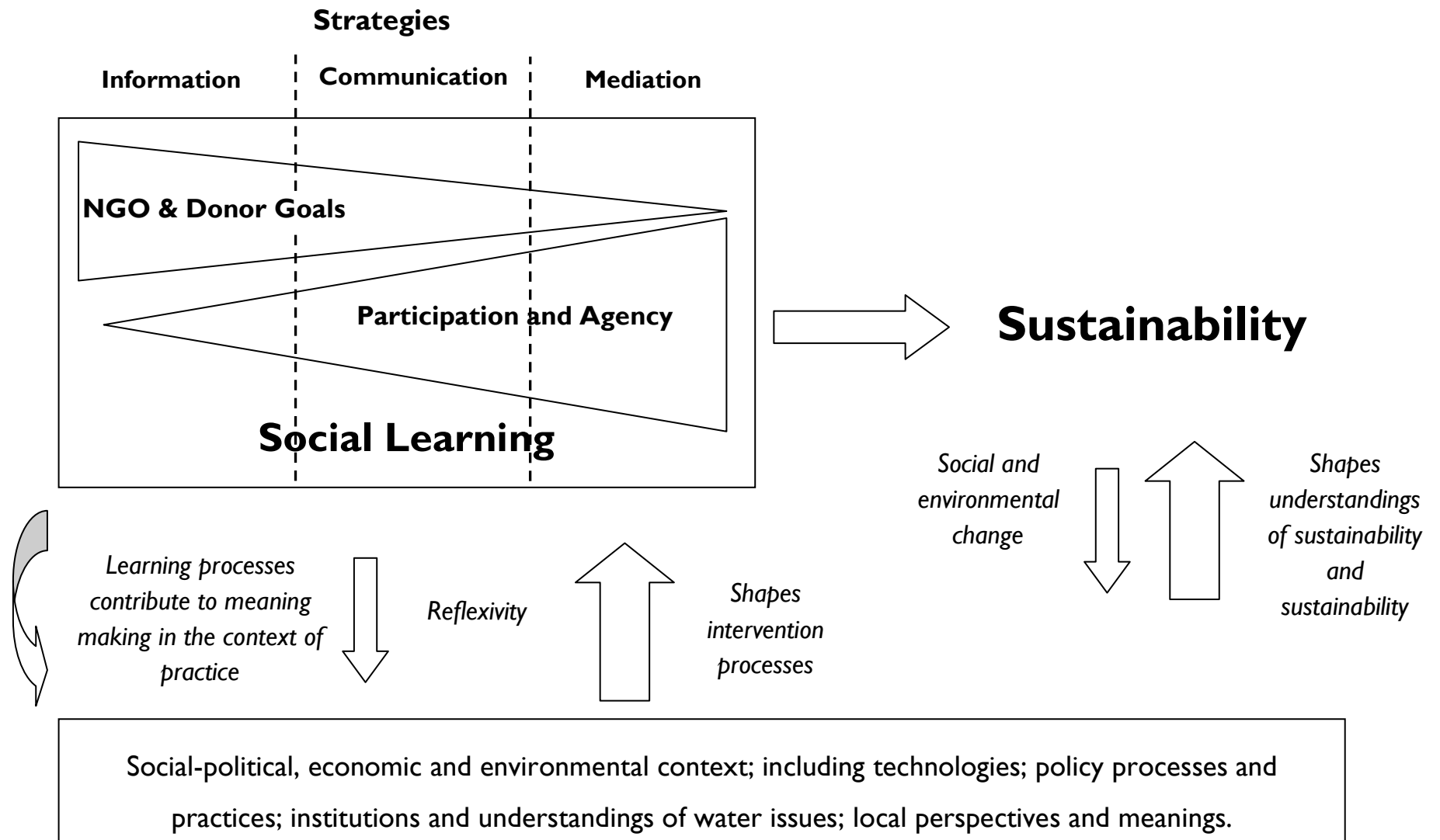
This research both recognises elements of, and suggests refinements to, Scott and Gough's model. Firstly, the call for all stakeholders to consider their own values and perspectives is significant in relation to water issues. It suggests a need for social actors to engage with others, while recognising the potential for considerable disparity between the interests, values, and approaches of NGOs, international donors and local communities. Secondly, Scott and Gough's emphasis on personal and social capacity is consistent with the finding of this research that local agency, ownership and mobilisation contribute to sustainable outcomes in community-based water interventions.

Figure 6.0 has been adapted from a sustainable development learning model proposed by Scott and Gough (2003), that captures the role that learning can take in relation to sustainability. The established model of Scott and Gough (2003: 38) entitled 'Information, Communication, Mediation: Contributions to Capacity Building', has been used in both fields of education for sustainable development and environmental education. It was proposed by Scott and Gough (2003: 37) to enable practitioners who apply different models of learning in diverse contexts to consider the effectiveness of specific learning strategies in relation to sustainable development issues. Such a connective model enabled me to consider the implications of different learning



strategies, which led me to focus on the approaches to learning that are characteristically more collaborative and can connect different ways of knowing, knowledge and practice in ways that build capacity and strengthen agency.

**Figure 6.0** A model of social learning and sustainability (adapted from Scott and Gough, 2003)



As aforementioned, learning is considered to be a central process in water interventions. The model of social learning in Figure 6.0 draws on the strategies proposed by Scott and Gough (2003), through which learning occurs, along a continuum from information and communication to mediation. It is proposed heuristically for those considering appropriate approaches to learning in different contexts. My research develops the model further by exploring who is shaping interventions and the implications of this for learning and sustainability. It considers, additionally, the interconnections between the nature of the learning and its purpose (and who decides this), and local participation and agency as well as the local context. Learning is considered in relation to local understandings of sustainability, whether this is the sustainability of water provision from a single or multiple sources, livelihood activities or equitable access to decision-making. From the literature, learning processes are understood to contribute to meaning-making in the context of practice and to build local capacity which is understood in the model in relation to agency.

Each of the strategies has implications for learning, participation and community ownership. *Information* provision relates to an understanding of learning as the organised accumulation of knowledge and skills. This is described as a one-way process by Scott and Gough (2003), in which new information is acquired through instruction, as in training programmes. In certain circumstances, targeted and appropriate information, such as that developed for hygiene practices, can greatly increase awareness and achieve desired outcomes. For example, information related to water storage and how to clean water tanks can help to reduce the incidence of waterborne diseases. However, when specific complexities of the context are present, or stakeholders understand an issue according to a completely different problem-definition, the usefulness of this information becomes increasingly problematic (Scott and Gough, 2003). When the issues or knowledge is disputed, the knowledge transfer needs to become a two-way process through *communication*. In this process knowledge is constructed and understandings emerge from social interactions and dialogue (Scott and Gough, 2003). In a situation where there are multiple and contrary problem-definitions and divergent values, *mediation* can support learning for all stakeholders when power dynamics and equity are explicitly attended to.

Through a process of participation and deliberation, participants are supported to theorise from their own practice and knowledge and are introduced to other perspectives and knowledge. This process requires all involved to be reflexive, not only in relation to the assumptions held about the purpose of the process and the assumptions involved but also in relation to identifying factors that are constraining or enabling practice and how practices are shaped by social, cultural and historical processes. Mediation strategies are characteristically more collaborative. The learning process can then become less defined by external goals and problem-definitions, with opportunities for learners to encounter new ideas and to exchange knowledge. Scott and Gough (2003) describe it as a process that becomes more educational in character:

'What is necessary ... is a process of exchange through which everyone involved may bring what they know to the table, and everyone involved should expect to learn'. (emphasis in the original, Scott and Gough, 2003: 41)

All of the approaches must recognise that local people bring important knowledge and skills to the intervention process and any learning strategy needs to connect with these experiences and knowledge in ways that do inform, question or challenge. Intervention processes need to respond to the context-specific problems and challenges that relate to water resources, water practices and local meaning, if they are to bring about valued improvements to people's lives. For example, residents of the village in the West Bank and in the Bedouin settlement identified issues that they are struggling with around water shortages and water quality in relation to rainwater water harvesting and storage. These questions open up opportunities for NGOs to enter into dialogue about local practice, including local water sources, water storage and treatment. Linkages could also be made with wastewater disposal, water and livelihood activities and sanitation. This would require a dialogue between local knowledge and technical knowledge as well as a deeper analysis of local water systems, water practices and conflict dynamics, as well as local institutions.

Returning to the example of the Arava Institute, which is developing decentralised approaches to grey water treatment and reuse in the West Bank, the NGO engages communities in discussions around the issue of wastewater (an issue which the Institute aims to address as a transboundary issue). The Arava Institute links wastewater issues to local concerns about household food security and health through an exchange of knowledge about low-cost methods of wastewater treatment and grey water reuse. They report that through this process, Palestinian communities are drawing on local resources in order to reuse grey water for small scale agriculture and are thinking differently about wastewater while sustaining a dialogue with Israeli communities:

*"The Palestinians need water more than anybody else in the region for agriculture so our approach is to decentralise wastewater management and to go into these villages and work with communities to develop small scale onsite facilities. Connect one house, connect two houses, connect five houses, connect a neighbourhood and eventually connect a whole village, but doing it not by investing huge amounts of money in large scale infrastructure but by small facilities within the community that provide the service and more importantly because all of these people have land for agriculture and the problem there, is their inability to irrigate the land effectively and that links to issues of food security or economic security. They can benefit directly from the water they get from this on their agricultural land that is usually located near to where they live and where the wastewater is treated ... I think it relieves the communities sense of frustration and you can say, look, you can do things that can improve your quality of life". (Extract from an interview with the Director for Transboundary Water Management, November 2015)*

In relation to external processes, the model in Figure 6.0 recognises that learning will occur outside of these NGO-led interventions and will be affected by these processes, which likewise, will impact on participation and agency. Scott and Gough (2003: 41) argue that 'these external factors also act directly, either positively or negatively, on sustainable development itself, and receive feedback through learning, as non-human nature responds in predictable or unpredictable ways'. The model therefore recognises that there are limits to local agency and what participants can change, whether in relation to a short timescale, the limits imposed by the environment or external factors that constrain the individuals' and groups' ability to respond and act at any given time. The model also considers the feedback loops from NGO and donor institutions which each have specific goals, values and practices that have social-political, economic and environmental impacts as a corollary of policy processes at local, national and global scales.

As discussed above, sustainability emerged as being central in the discussion of water issues and interventions with residents from villages in the West Bank and Bedouin settlements as well as members of local and international NGOs. While some international NGOs framed the discussion around identifying how water issues can be approached in order to achieve the continuation of project outcomes such as access to drinking water or the conservation and of specific water sources, other NGOs, particularly local NGOs and local people, linked sustainability in this context to social justice and equity. When viewed as an equity issue, participation and the development of agency are central to sustainability and to the realisation of water rights and other freedoms. In relation to their everyday lives, local people discussed access to water in terms of water quality and affordability, the development of livelihoods that are intimately connected to a valued way of living, and to the reduction of poverty. These research findings suggest that sustainability must be understood in relation to the context and diverse but interconnected priorities.

## **6.6 Conclusions**

It is hoped that the model will support NGOs to identify what learning approaches can contribute to local meaning-making and ownership in the context of water interventions as well as the external processes that may necessitate co-learning and joint actions at multiple scales. However, no model of complex social interactions can ever be complete or indeed timeless. Therefore, the model is expected to serve an heuristic role as organisations and others consider the interconnections that it suggests at certain places and particular times. Due to the continued occupation of the Palestinian Territories, the legal obligations concerning the Palestinian right to water remains conflicted. The impact of these political failures on local people's lives has been voiced by those who have been displaced and marginalised. Therefore, while it is essential to improve how local people are represented and to build local capacity, it is

recognised that legal and political issues also need to be addressed at other levels as argued by Edward Said (1985).

Although a learning-based approach to water interventions cannot claim to address these complex circumstances, the constraints that NGOs and communities experience, does require knowledge to flow from the bottom up, for adaptive and locally responsive approaches and collaboration. A social learning approach can support processes that build local capacity, strengthen agency and community ownership for longer-term social and economic recovery as well as to enable civil society to influence their own government's policy choices and actions so that the Palestinian Authority is accountable to them. Where communities and NGOs are drawing on traditional technologies such as rainwater harvesting which harnesses water locally and are finding cost-efficient ways of treating low-quality water sources and recycling more water; co-learning processes such as knowledge sharing and networking have been critically important.

The communities in this research are no longer hopeful that their water rights will be realised and the history of upheaval, loss and dispossession will end. However, they are hoping for the best possible outcomes from water interventions that enable them to voice their understandings and to make decisions about issues that affect their lives, even in such impossibly difficult circumstances. Their narratives asserted a long connection with place and the persistence of a way of being that is so fundamentally linked to water. Recollections of agricultural landscapes and agro-pastoral acts which support an identity of self-sufficiency, dignity and resilience, suggest that local people are as anxious as NGOs for a transition to non-dependency and sustainable outcomes.

In order for water interventions to be empowering for these marginalised communities, local people must have ownership of meanings and be able to negotiate them during the intervention process. Learning and sustainability depend on this ownership and negotiability. Mediation is one learning strategy that can introduce new knowledge in a way that connects to valued water practices and the unique relationship that local people describe between their lives, water and the land (Burt and Berold, 2012).

## **Chapter 7: Conclusions and Reflections**

### **7.0 Introduction**

This chapter provides a synthesis of both the literature that was reviewed in this research and the themes that emerged from the data analysis. At a practical level, the findings have implications for NGO-led community-based water interventions and are discussed according to a range of principles that might guide practice for NGOs and donor organisations. This is important as the research question responds to the need to explore how water interventions might better bring meaningful and sustained improvements to the lives of marginalised groups (as called for in the work of Mehta and Movik, 2014). This question has been approached from a learning perspective and my research contribution is also elucidated in relation to the findings that address the research question:

*How can learning that results from NGO-led community-based water interventions be mediated by local level understandings, particularly those that relate to sense of place?*

Finally, reflections are made on the research process and considerations for further research. Despite the constraints that are experienced in the West Bank, some NGOs and communities are finding ways to respond to water shortages, while emergency water interventions remain essential for marginalised communities to access potable water and to reduce the incidence of waterborne diseases.

### **7.1 Water narratives: multiple understandings, power and the case for co-learning**

The meaning-based framework that was developed in this research set the boundaries for exploring local understandings and NGO (re)presentations of water shortages in the West Bank. The research examined the powerful narratives that shape understandings of water shortages and options for water intervention practice and policy in the OPT. The implications of the dominant water discourse for local people's lives and sustainability issues were subsequently discussed. Sense of place was a key concept in understanding how learning can be mediated in the context of multiple problem-definitions to lead to more sustainable water provision that better meets the needs and priorities of more marginalised communities.

The view of many commentators that water issues in the OPT are inextricably linked to the political context, is not reflected in the dominant framing of water shortages as a humanitarian crisis nor is it widely represented in the governance and development-related discourse at various levels. The findings of this research show that the effects of this discourse on NGO programming and local water practices are constraining, as



NGOs and Palestinian communities, particularly communities in rural and semi-rural areas of the West Bank, are highly dependent on foreign aid and water interventions to meet basic water needs. Despite recognising water shortages as a political issue, local NGOs reported a reluctance to always frame the issues in relation to a rights-based discourse due to the need to be cognizant of the 'cooperation discourse' for the purpose of securing donor funding for projects on the ground.

Water has become symbolic of vast inequalities between Israel and Palestine for the residents of the case study areas, the case study NGO and other local NGOs. With the intractable nature of the enduring conflict in the region, local NGOs have become accustomed to working within the physical constraints of the occupation as well as the prevailing discourse, while coping strategies have become an inexorable part of local people's everyday lives. The research found that many of the residents in the case study village and settlement understand NGO water interventions to be essential short-term emergency relief but do not consider these solutions to be their own. These marginalised groups lack freedoms to pursue personally and socially valued 'functionings' (different states of being and doings that a person is able to realise) (Sen 1993: 30; also see Robeyns, 2005), which is compounded by the lack of opportunities for decision-making based on what individuals' prioritise and value in relation to water practice and policy. The case study NGO's accounts of short-term funding cycles and the reluctance of risk averse donors to consider alternatives to the creation of new water supply, support local perceptions that externally prescribed water interventions are not improving the water security of marginalised communities in any sustained way. These findings have a number of implications for learning and the development of a learning-based approach that engages with multiple and conflicting problem-definitions in an effort to reduce the gap between water policy, intervention practice and lived experiences of water shortages.

The key findings in relation to water, place and learning are discussed in the context of NGO-led community-based water interventions in the West Bank, around the following principles: being place-based and mediated; being sustainable; being deliberative; strengthening agency and building capacity; and, being connective or networked. While the research has explored a diversity of interrelated meanings in relation to water in the West Bank the secondary purpose of developing a framework is to enable others to discover what is meaningful in other contexts and the links between the categories of meaning. Therefore, the following approaches could assist practitioners in other settings if they are interpreted in their own context. The conclusions will be of value if it is accepted that one of the aims of NGO-led community water interventions is to build capacity and strengthen the agency of marginalised groups to improve the sustainably and equity of access to water and water use.

## ***7.2 Place-based and mediated approach***

My aim in developing the meaning-based framework was to show the potential of what could be achieved with a co-learning approach based on the integration of multiple meanings and understandings of water. One of the challenges lies in explicitly addressing the relationship between knowledge and power, and the often implicit assumption that learning is one-way from donors and their partner NGOs to communities. For example, the diffusion of methodologies and strategies for community-based water interventions from international donors was evident in the widespread application of needs assessment pro forma by local NGOs. Another example is the transfer of certain technologies and the provision of training for the management of these, such as large-scale wastewater treatment plants in the context of the OPT. Despite many local NGOs questioning whether building the infrastructure at this scale is the best way to address the issue of wastewater management and the development of water resources for marginalised communities, it remains the focus of many international and national stakeholders.

The qualitative exploration of water using a sense of place framework, enabled a wide and deep appraisal of the local meanings that inform; coping strategies, the priorities that people themselves identify in relation to the functions that water serves, valued water practices and knowledge, identity and relationships with the environment. The framework incorporates the material, the symbolic and relational dimensions of water with the intention of moving away from the needs based assessments that local NGOs often employ, towards developing appraisals that are based on what local people are currently doing and their related skills and knowledge. In this way, intervention activities can help to rebuild meaning or to support the creation of new ones.

Local people are faced with acute water shortages and impossible choices in terms of coping strategies that can have deleterious effects on their lives in the longer-term. Their narratives stressed the vulnerability of their everyday lives. While recognising that NGOs can learn from examples of negotiation and adaptation, it is important to acknowledge the limitations that these communities face in terms of the strategies that they can pursue in response to water shortages. Capacity building does require resources and in the context of the OPT, actions are required at multiple levels in order for local people to be able to realise their water rights.

This research has contributed to an understanding of the importance of place-based meaning for identity and the practical consequences that may ensue. Multiple connections to the land, water and identity were expressed through metaphors, supporting the observation made by Feld and Basso (1996:11) that place is 'metaphorically tied' to identity. Local people used their narratives to describe the land and water as being inextricable from self and heritage. Place dependence was also understood in terms of identity and the survival of a way of life, rather than solely the fulfilment of certain needs, as it is often described in the literature. Knowledge of the

land, environmental variability and ways of diverting, capturing and storing water, evoke ideas of resilience, security, strength and resourcefulness, in a challenging environment. Traditional water technologies such as cisterns have become symbolic of these social values as well as demonstrating how the environment has also influenced local water practices. Meanings are understood to change over time and have been transformed with the conflict in the region. The unique relationship that local people describe between their lives and water was observed as an act of remembering place and creating a shared history that is closely related to an idea of a Palestinian identity. The traditional water technologies, such rainwater harvesting and cisterns have become symbolic of a historical presence and claim to the land.

It is important to acknowledge that individuals and groups will respond to these meanings in different ways as a result of power relations, cultural norms and beliefs. The diversity of valued uses of water that were described by the men in the case study settlement and the women in the village, reflected gendered roles and responsibilities, with women prioritising the needs of the household. This highlights the potential for conflict that is indeed universal, between the pursuit of individual needs and goals and the need to participate within social groups or a social life to maintain cultural norms and beliefs. As a result, personal concerns and priorities are often multiple and conflicting as they are shaped by a multitude of factors relating to the socio-political, cultural and environmental context (Gough and McGregor, 2007; Alkire, 2002). However, instances of cooperation coexist with conflict and the women had formed a committee as a way of negotiating their roles and responsibilities for water outside of the household. Some of the women demonstrated their ability to utilise different gendered roles within the household towards diversifying their activities to include household production due to water shortages and the decline in agro-pastoral livelihoods. The women in the case study village associated participation in development cooperative activities with empowerment, where they are based on their knowledge, ideas and skills. They talked at length about an apiary in the village that the women were managing and their aspirations for a home bakery. The women are able to gain new understandings about their lives through these experiences.

Examples from the literature also suggest that participation in similar interventions necessitate the renegotiation of meanings in people's lives and an extension of their roles, through which they can realise certain aspirations (e.g. Saigal, 2008). However, the challenge lies in the renegotiation of cultural norms at other levels. Furthermore, the women in the case study village gave accounts of their experience of conflict within the household as water shortages continue to contribute to livelihood uncertainties and negative coping strategies. This suggests that households and communities need to be supported in conflict resolution and engaged in dialogue about their lives.

The research suggests that by understanding the multiple meanings given to water and place, NGOs and other organisations that are involved in community-based water interventions, can gain a better understanding of the different problem-definitions that

may lead to more effective practical action. The wider research into sense of place and water resource management has shown the significance of meaning in shaping local responses to interventions and framing problem-definitions. Therefore, a meaning-based framework could help NGOs in prioritising the issues and understanding how problems are locally defined in addition to learning from local water practices and knowledge in the design process of interventions. The insufficient flow of knowledge from the local level up means that communities are unable to articulate their knowledge and understandings and so influence the process whereby donors, national and local government and NGOs come to understand water issues. The meaning-based framework is essentially about engaging with multiple understandings, perspectives and forms of knowledge while widening the relationships that these stakeholders participate in. The learning that occurs during this process can then inform the design stage of water interventions.

The gulf between different knowledge systems can also exist between donors and the NGOs just as local and technical or expert knowledge is often dichotomised. This means that knowledge needs to flow in both directions. The research shows that marginalised communities need better access to information and resources in order to address knowledge uncertainties associated with local water practices, for example the limits to current water use in relation to groundwater recharge, rainwater storage and water quality, climate change and increasing environmental variability. They need to be involved in monitoring some of these issues and in deciding what works and why. This is not only important for enabling continuous learning and decision-making but this research supports the finding that knowledge is an important aspect of one's relationship with place. For the Bedouin shepherds, knowing is central to their sense of place and self. It not only allows them to navigate the landscape and the dry season but shapes their imagination about the past and the future.

This research suggests that local people are already negotiating meaning and power relations both within the household and wider community. For example, local accounts described the need to form relationships with nearby villages to gain access to water, making payments for piped water and water from private vendors as well as the use of grey water for small-scale, informal activities such as home gardens. Water was discussed by local people in relation to multiple activities and this suggests that water needs to be explored in relation to valued uses of water and livelihood strategies for planning intervention designs and policy. One of the challenges of a continued focus on relief interventions is that donors and NGOs fail to understand how water is allocated within communities and reallocated within households. The women from the case study village described the diverse activities that depend on access to water and the hope that these valued uses can be incorporated into the planning and design of interventions. This is important as women were not always represented in the public spaces where the case study NGO operated. However, the researcher did not have the opportunity to observe women's participation in NGO-led activities in the Bedouin settlement during the fieldwork.

Communities need to be supported in the process of change and the recreation of meaning in order to help individuals and groups to cope and adapt to the uncertainties associated with the current situation. This finds support in the literature on resilience theory and the social learning literature (e.g. Tidball and Krasny, 2014; Burt and Bernold, 2012). The process requires NGOs and other organisations who are involved in water interventions, to concurrently engage with diverse knowledge and the multiple meanings that have been discussed in this research (i.e. what people are already doing and their perspectives), and connect this to other knowledges and understandings.

### ***7.3 Sustainability: a social learning-based model***

The meaning-based framework that was developed from an understanding of sense of place and a socio-political perspective of water, was also found to have a role in the sustainability of water provision or wider water intervention outcomes. The social learning literature suggests that learning by all stakeholders needs to be central to water interventions in order for sustainable water provision and use. A number of learning strategies were discussed, ranging from information, to communication to mediation. All of these learning strategies have value depending on the context in which they are applied. The revised model of social learning (Figure 6.0) positions these strategies along a continuum. It suggests that by facilitating learning processes which support local meaning, mediation strategies can help to build capacity and strengthen agency so that people have greater ownership to participate in reflexive action and change (e.g. Burt *et al.*, 2014a; Cundill *et al.*, 2014; Sterling, 2014; Scott and Gough, 2003). The learning-based model assists with understanding the relationship between water (understood in terms of both physical access and meaning), sustainability and learning, as it captures a variety of different contextual factors that influence how these processes take place. The sustainability issues that emerged in the context of the West Bank are discussed further in this section.

Sustainability emerges as a central issue from the narratives of both NGOs and the residents of the case study village and settlement. From the perspective of local NGOs, the sustainability issues relate to prescriptive models of what can be funded and the risk aversion of donors. While emergency water interventions provide vital assistance to meet basic water needs, there is no evidence of a transition to even medium-term interventions or longer term development processes. NGOs report feeling pressurised into framing issues around the discourse that partner organisations and donors produce and maintain. This suggests the significance of the history of the relations between bilateral and multilateral donors, their governments and the OPT. The literature on the politics of water and conflict in the region argues that a discourse of cooperation operates to effectively maintain the status quo, while the Palestinian Authority has little power or incentive to renegotiate this due to the power

asymmetries between Israel and Palestine and the Palestinian Authority's dependence on foreign aid. As a result, the Palestinian Authority, donor organisations and NGOs are not accountable for producing sustainable outcomes or creating sufficient opportunities for local people to participate in decision-making (e.g. facilitating the formation of local institutions).

Emergency or relief interventions are also observed in this research to compound the uncertainty that marginalised communities are experiencing. This research points to the short project cycles and limited community participation in decision-making in relation to water supply and delivery as contributing factors. For example, households are unable to plan for the delivery of water tankers, which is particularly problematic for Bedouin shepherds whose movements with their herds are both temporally and spatially variable. The transfer of technology and new ways of organising water users is also argued by some NGOs to undermine the sustainability of water provision, when communities are excluded from decision-making processes. The local NGOs argue that the top-down approach to water interventions reduces the capacity of local communities to organise themselves and to adapt to change and uncertainty but options for alternative approaches are limited due to donor directed agendas and the constraints imposed by the occupation.

Local people understand sustainability in relation to water in terms of equitable access to water and the maintenance of valued water practices. These water practices are linked to a diversity of activities that sustain a way of life and sense of belonging as well as the fulfilment of roles and responsibilities associated with multiple social identities and material wellbeing. Sustainability is also understood in relation to the affordability of the water supply and technologies. Local accounts highlight the difficulties that some households and communities experience after NGOs leave the area, in terms of accessing the resources that they need to continue with water treatment or to maintain water pumps and other water systems. The sustainability of water provision and use depends on the use of resources that are locally available and affordable (Mehta *et al.*, 2007).

Community ownership is also argued to enhance sustainability as it is understood locally in relation to agency and resilience. In the context of the occupation of the West Bank this is highly important to the residents of the case study village and settlement. Local residents understand that they can only put into practice what the circumstances allow but they aspire to be able to take actions to improve their lives as opposed to using the resources that are available to them to adjust to water scarcity and increasing poverty. The negative impacts of current coping strategies on people's lives need to be explored and local coping strategies learned from in order to help to define patterns of vulnerability and uncertainty.

For sustainability, the nature of participation and the opportunities to share knowledge, deliberate and to make decisions, are as important as the outcomes of

water interventions. As Mehta *et al.*, (2007) argue, social processes and relations underpin the development of the arrangements for water use and its distribution. Therefore it is argued that the implementation of a new technology cannot, by itself, transform people's lives. Therefore, this research emphasises the need for greater attention to intervention processes, as sustainability depends on a process that creates spaces that enable local people to express different perspectives and local conflict, and strengthens local agency and capacity. Furthermore, locally-directed change and ownership is understood to be an important part of reconstructing identity, both of individuals and groups. This will depend on a timeframe that can accommodate a co-learning process. NGOs need to identify the capacity of stakeholders to participate and the resources and time that are required to support participation at different stages of interventions. Sustainability also depends on the NGO explicitly attending to issues of equity and the power dynamics between all stakeholders. This is important in order to address longer-term water resource management issues as opposed to the current focus on water provision. This will require the support of donors to commit funding to sustainable water and sanitation solutions and to be an advocate of the realisation of Palestinian's water rights.

Although local accounts of water did not explicitly discuss sustainability in relation to ecosystem health or the protection and conservation of water resources, they do identify questions that arise from water practices around environmental uncertainties. For example, local people are observing temporal and spatial changes in water availability and quality, evident in their descriptions of natural springs that have ceased to flow and increased rainfall variability. This research suggests that these questions open up opportunities for NGOs to enter into dialogue about local practice and to introduce new knowledge that can support the development of understandings around the sustainability of water use in relation to hydrological systems, ecosystem health and climate change. Knowledge flow in both directions is essential to support learning when it is mediated by NGOs and addresses the issues raised by local communities. Researchers are exploring the role of mediation as a learning strategy in relation to sustainable water resource management in other contexts (e.g. Burt *et al.*, 2014a&b) and it would be helpful to explore the applicability of these findings for NGO-led community-based water interventions in the West Bank.



### **7.4 Deliberative**

There is a consensus in the social learning literature that processes that involve dialogue and deliberation between multiple stakeholders, support ongoing learning and enable synergies to emerge (Cundill and Rodela, 2012). It is this ongoing engagement between all stakeholders and continuous learning that is deemed essential for sustainability (Sterling, 2014).

A social learning approach is adopted in this research as learning is understood to be situated and an aspect of social practice, of which water interventions are a dynamic part. According to the social learning literature, learning can be enhanced through deliberation and reflection when mediated by NGOs or other community-based facilitators. This has a number of implications for practice as it may require additional skills and a new methodology on behalf of the NGO, as facilitation of this process requires everybody to engage in learning. There are also a number of constraints to implementing a co-learning approach to water interventions, particularly in how NGOs themselves understand learning and the lack of resources that are assigned to learning as an explicit strategy in relation to different stages of the intervention. For example, this research illustrates how the case study NGO understands learning as a more dyadic process that can be employed within specific educational programmes such as hygiene awareness or training workshops. Rather, mediation depends on facilitators engaging with local people's water practices and experiences, being responsive to their understandings and perspectives, while introducing new knowledge and alternative ways of thinking and doing things, as opposed to information provision or communication strategies.

Deliberation is described in the literature as a way to address multiple problem-definitions and uncertainty through engaging stakeholders in knowledge exchange, reflection and negotiation, for the purpose of decision-making and collaboration. The assumptions behind the problem-definitions need to be collectively considered as part of the learning process. This is argued to enable individuals to reinterpret their own experiences, understandings and knowledge. The suggestion of the importance of dialogue implies that people engage with others in a process of meaning creation rather than merely presenting statements of individual positions. As opportunities for self-organisation, for the acquisition of new experiences, knowledge sharing and reflection, are understood to arise through discussions and debates, learning is possible by way of both conflict and cooperation. The social learning literature primarily focuses on loop learning, specifically multiple loop learning, described above as a process whereby individuals learn about their own and others perspectives and understandings and the broader context of the assumptions underlying these. New communities of practice can emerge from this process of deliberation.

Although the social learning literature shows that an iterative process can lead to some shared understandings, problem reframing and a greater awareness of alternative

perspectives, the assumed change-process towards values promoted by critical theorists is argued to be problematic. The social learning process itself will be shaped by the local context and power dynamics. Furthermore, there is little evidence to support the relationship between a change in attitudes and beliefs and behavioural change. In light of this complexity and an understanding of learning as a dynamic and emergent process, this research suggests that the value of social learning is in its inclusive and connective approach, through introducing NGOs and local communities to alternative understandings and perspectives. This process does not seek a consensus but instead identifies connections and synergies, and the need for deliberation.

The different learning strategies that are available to NGOs and the implications that these have for learner participation, agency and sustainability, need to be considered by NGOs who lead community-based water interventions in the context of their practice. For example, '*learning by*' local participants through information provision and communication have considerable value in supporting behavioural change such as hygiene practices. '*Learning from*' local people may also be more appropriate during consultation stages of interventions where participation may be particularly instrumental.

This research shows that learners bring their own knowledge, experience and questions relating to their water practices that can inform the co-production of knowledge about water issues and help to shape the learning agenda with NGOs. It is argued that mediation as a learning strategy needs to be explicitly programmed into interventions in a way that sustains relationships between communities, NGOs and other stakeholders, as to allow knowledge exchange. As mediators, NGOs need to consider who is framing the issues and explicitly prioritise the understandings and concerns of marginalised groups. This requires an in depth understanding of the context and the skills to facilitate dialogue and deliberation and to link knowledge to local practices.

If it is accepted that the aim of water interventions is to improve the water security of specifically marginalised groups, then the process needs to be dialogic, inclusive and collaborative. This is deemed important in the context of the West Bank where the research observed the suspension of questions relating to local ownership and agency. Communities reported feeling frustrated due to their dependency on external relief interventions and by the lack of opportunities to articulate their knowledge and understandings and to codetermine intervention outcomes. Local people need to recognise that they can benefit from the process, not merely in terms of access to water but in the development of knowledge and skills that can help them to adapt to changes in water availability in the longer-term. Mediation as a learning strategy can support individuals and groups to make sense of such uncertainty and complexity by understanding the significance of these issues in relation to people's lives so that they can draw meaning from it.

Based on an understanding of multiple loop learning, this research suggests that local people need to be engaged in constructing and owning meaning to prepare them for change, so that they can continue to learn, to reframe problems and to adapt. The research describes how experiences of conflict, dispossession and loss are debilitating for local people and their capacity to re-imagine the future and to understand their capabilities. This suggests that rather than aiming to bring about a specific change in behaviour or other related outcomes, interventions also need to create opportunities for dialogue, deliberation and inquiry. It is important to acknowledge the limitations that people will continue to face in the context of the West Bank and the implications that conflict dynamics do have for interventions. This will require NGOs to build capacity in negotiation and conflict resolution, to consider how they can support collaboration with multiple stakeholders, in addition to supporting varied actions and processes at a number of levels towards the realisation of Palestinian water rights. This of course has implications for the way that water issues are framed as current practices emerge from the narratives that donors and their governments (re)produce about place and water. The reframing of the issues would depend on greater reflexive practice and knowledge flows in both directions; from local communities and NGOs upwards and from donors to national and local government, to NGOs and local communities.

The case study examples of different learning approaches to community-based WASH interventions in Chapter 6, highlight a more relational perspective of knowledge and learning, in which meaning is negotiated and constructed through dialogue and mediation. Again, this helped to define the boundaries in the education literature and supported the relevance of the social learning perspectives of communities of practice (Wenger, 1998), situated learning (Lave and Wenger, 1991) and multiple loop learning (as envisaged by Argyris and Schön, 1996 and Sterling, 2001). Examples are given whereby a number of stakeholders contribute to the reframing of issues and a diversity of knowledge is subsequently synthesised. This takes place in spaces that are specifically created for co-learning, such as field visits, workshops or areas within villages that are meaningful for a particular issue or group. Local people are introduced to alternative perspectives and options based on an exploration of the issues they identify and prioritise. As collaboration takes place, the NGOs report that participants learn how to work with others and importantly, how to use the outcomes of this collaboration in their own practice, e.g. adapting a new technology to the local context or problem-solving based on collaborative monitoring and analysis.

### ***7.5 Strengthening agency and building capacity***

The findings from this research prompted an interest on the part of the researcher in co-learning as an empowering process, as it was observed that local people can come to understand their capabilities through their relationship with NGOs during emergency water interventions. The accounts from NGOs who operate in the West Bank suggest that the dominant model of emergency water intervention actually weakens community mobilisation and contributes to the dependency on external support that some of the residents of the case study village reported. Further research is needed to identify what is central to the development of agency and to explore the interconnections with learning strategies such as mediation, capacity building and sustainability in the context of community-based water interventions in the West Bank.

The social learning literature and evidence from the case study examples discussed in Chapter 6, suggest that a process of deliberation can support capacity building and strengthen local agency. Capacity building is required in order for participation and co-learning to be an empowering process, whereby local people can negotiate and communicate effectively during intervention processes. These skills are anticipated to be important for local participation in any future policy or institutional reform to enable local people to act in the decentralised structures that are envisaged in the 'National Water and Wastewater Strategy for Palestine' (PWA, 2013). Processes of this kind are envisaged by Sen (1999) in relating democratic processes of decision-making to individual agency, freedom and wellbeing. The case study of community-based water interventions in South Africa in Chapter 6, illustrates that external funding is needed to build local institutions as well as the agency to participate in these.

This research highlights that although NGOs can encourage community organisation for the purposes of water interventions, for example, with the establishment of water user committees in relation to a specific water practice such as irrigation, this process does not necessarily equate to participation. At a practical level, these findings have implications for NGOs who need to consider what stakeholders require in order to participate in intervention processes and to understand how the context effects participation, from conflict dynamics and power relations to language barriers. These observations resonate with Burt and Lotz-Sisitka (2006) recommendations for greater reflexive practice within organisations that support community participation and mobilisation in water resource management:

'Access to meetings may not be enough. People may lack the skills and ability to be able to participate. This lack goes beyond 'knowing' about water resource management and includes being able to vision a future in which 'We are active citizens', being able to deliberate and make decisions within the structures being established, being able to understand these structures and one's role within them. In other cases, consideration needs to be given to situations where some groups have not had experience of engaging in multi-cultural

environments, and where the skills of negotiated consensus and tolerance are needed' (Lotz-Sisitka and Burt, 2006: 139).

The guidelines given by Burt and Lotz-Sisitka (2006) help to highlight the need for NGOs to be explicit about the level and type of stakeholder participation that is required for each stage of the water intervention. According to Burt and Lotz-Sisitka (2006) this means that each stage of the intervention should be linked to a plan for stakeholder participation and the projects' overall objectives, while acknowledging that not all stages may need the same level. This plan also needs to specify the resources, capacity building and facilitation that are required for each stage.

By recognising that learners bring their own knowledge and experience rather than viewing them as adopters of new technology or information, co-learning favours approaches that enable people to discuss and debate issues and to make decisions. Multiple loop learning depends on the ability of the facilitator to introduce people to alternative ways of defining problems so that they can reflect on the values that underlie their own understandings and strategies (i.e. why they prioritise certain water practices instead of others). Learning through reflexivity is argued to be central to the development of individual and community agency as it engages them with alternative values and ways of thinking and doing things. When co-learning integrates knowledge and action, individuals and groups can expand their capabilities (what people value being and doing). The skills and knowledge that people will require to be able to engage in this process will need to be co-determined by the participants and facilitators. Accordingly, learning becomes a more reflexive process to enhance an awareness of alternative problem-definitions and ways of doing things for both local people and NGOs. However, this depends on the ability of individuals within the NGO to reflect on the organisations own values (and the support of the NGO to do this), as well as the competence of facilitators to mediate the process and to develop strategies that attend to social inequalities and power dynamics.

Individuals and groups may benefit from activities to support their capacity to articulate their own ideas and to act. The social learning literature suggests that by supporting processes that build capacity and strengthen agency, NGO-led community interventions can help to transform people's identity. Learning in this way is argued to become a source of meaning if people are then able to act, based on new understandings, knowledge and skills. This is understood to be an important process of becoming, as identity is realised through learning. By supporting marginalised communities to participate in a process of dialogue and deliberation and by providing opportunities for people to make decisions and to act in water interventions, NGOs can support how local people understand their capabilities and their experiences of identity. This represents a positive move towards identifying what people are capable of doing and the facilitation of this.

### **7.6 Networked**

This research has highlighted the complexity of water issues in the West Bank and the impact of this complexity on the way in which the management of water resources is currently being approached and how it is being envisaged in the future. Tensions appear to exist between donor-initiated water policy reform that is intended to recentralise control over water resource management in a demand-led approach, and customary law that still governs water access and use at the local level. A demand-led management approach would itself require significant resources and capacity to deal with negotiated demands and likely trade-offs. An alternative discourse is evident within some local NGOs who are arguing for water resource management to be broadened so to include human rights and the environment. Any water reform will require concurrent political processes as water issues are situated within the wider political context of the region.

The establishment of donors as major stakeholders in the water sector is perceived by many local NGOs to be constraining the development of sustainable solutions, whether large-scale infrastructure or decentralised services, as they are unwilling to challenge the restrictions that the Israeli authorities impose and subsequently (re)produce dominant narratives. The case study NGO described how donors work within restrictions but many projects are blocked or delayed due to the difficulties around obtaining a permit. It was also observed that the resultant emergency interventions, perceived by some local NGOs as stop-gap measures, also obstruct the coordinated use of development assistance. More integrated and coordinated actions are required between international agencies, donors, NGOs and governments that are responsive to local people's needs so as to maximise existing resources and the outcomes of interventions. Local NGOs recognise that institutional reform is also required in order to support the representation and participation of local communities, although this remains outside of the scope of the research.

A shared argument of the NGOs featured in Chapter 6, was the need for a connective or networked approach to water intervention practice and policy. Due to conflicting problem-definitions and priorities, they argue that a deliberative process is needed between different levels, including NGO and their donors. The case study NGO's reports are transparent in reporting the difficulties and obstacles that are encountered during projects but this monitoring and reporting also needs to be ensured by donors. A connective approach for co-learning requires capacity building at community and organisational levels, within service providers and local and national government. This is essential for semi-rural and rural communities whose needs and interests have not been represented or protected by the Palestinian Authority or the Israeli government. The physical remoteness of these communities also hampers their access to services, information and interventions.

An understanding of what is required in terms of water provision and management, alternative options and examples of what works well, is argued to be facilitated through building relationships at a number of levels. Partnerships and networks can foster knowledge sharing and synthesis across multiple levels and provide opportunities for learning. Joint working is recommended wherever possible as demonstrated in the approach advocated by the Arava Institute that works with individuals and groups from the West Bank and Israel, despite the constraints that exist due to the occupation of the Palestinian Territories. This requires coordinated forms of action involving a range of stakeholders, adequate financing in addition to enabling policy and legislation at national level. All of NGOs from the case studies in Chapter 6 stressed the importance of working to gain the support of the local government for effective piloting of interventions and up-scaling these.

The social learning literature suggests that new communities of practice can emerge from a more connective process of engagement. This is important in order to explore the wider context of water issues. Further research is needed to understand how learning can become situated in wider communities of practice and how groups can organise themselves to learn and act collaboratively in ways that increase their resilience and the sustainability of outcomes.

However, discussion of the rights-based approach and discourse suggest that gaining equitable access to water has to become a political priority at national and international levels (e.g. Falk, 2014; Cahill-Ripley, 2011). In the case of South Africa, a rights-based approach is argued to have provided a template for the water sector reform process and has strengthened marginalised communities claims for improved access to water (interview with Tichaona Pesanayi, October 2015), despite the difficulties with its implementation due to a lack of financial and institutional capacity (Mehta and Ntshona, 2004).

## **7.7 Recommendations for further research**

A number of recommendations for further research have been made in relation to the principles above that emerge from the findings of this research and gain support from current research, including social learning and agency, resilience and policy research. The recommendations that have been made are summarised here as areas for further research and are proposed together with the interconnected questions that were identified for consideration in section 6.1:

- the recreation of meaning and experiences of identity in water interventions in the context of conflict situations and what factors contribute to this.
- the interconnections between learning strategies, capacity building and agency and sustainability in the context of NGO-led community-based water



interventions, based on the revised model of learning and sustainable development.

- how groups might organise themselves to learn and act collaboratively in ways that increase their resilience and the sustainability of water provision and use.

## **7.8 Reflections**

### **7.8.1 Place-based meaning framework**

The meaning-based framework was developed from sense of place theory and was tested in the context of the West Bank for insights into mediated learning in NGO-led community-based water interventions. The framework is intended as an heuristic framework for the consideration and analysis of how water is understood in relation to people's own knowledge and lived experiences, as well as providing an entry point into the socio-cultural and political context and mediated approaches to co-learning. It places local understandings at its centre. This is felt to be significant in light of the reality that basic rights to adequate and safe water are still not universally guaranteed and are highly inequitable.

The emic understandings that were identified from the research findings, contribute a more dynamic understanding of the meanings and dimensions to sense of place that are discussed in the literature, particularly in relation to identity and belonging. The findings also contribute a more critical understanding of the role of social relationships in determining what people are able to do and to be.

Although the etic categories of sense of place and water have traction in practice due to the findings that support these and the relationships between them, the emergent themes of sustainability and agency suggest that emic understandings must be prioritised over etic categories in order to privilege people's own meanings at the local level. The analysis of local meanings contributed to a more nuanced understandings of water shortages and local realities in relation to the different dimensions of water. It also helped to highlight the factors that contribute to the sustainability of water provision and use and the importance of agency and resilience as dimensions of water security for marginalised groups.

### **7.82 Water, learning and sustainability**

The effects of the dominant water narratives on NGO-led community-based water interventions in the West Bank were described by local people and NGOs in relation to constraints on diversity and what is possible on the ground in addition to local ownership and agency. The observed lack of local agency and issues surrounding the transition to sustainable water provision, led me to revisit a model of social learning in relation to sustainability. The model and case studies in Chapter 6 have shown evidence of what can be achieved through mediated co-learning and its potential to enhance agency, ownership and the sustainability of water provision and use. However, this potential will be influenced by the socio-political, economic and environmental context.

The social learning model is consistent with the theoretical perspective of social learning, namely that learning can occur with or without structured interventions due to a range of external factors and that in learning through mediation strategies, 'everyone involved should expect to learn' (emphasis in the original text from Scott and Gough, 2003: 41). The model is helpful in highlighting the arguments made in this research in relation to the potential role of co-learning where multiple understandings of the problem-definition exist in relation to water shortages and where there are power asymmetries associated with these. In this context, information and communication strategies are deemed insufficient by themselves in order to enable marginalised groups to develop their capabilities and to enter into dialogue with other stakeholders in a process that is co-determined with NGOs. Mediated learning is argued to have the potential to enable marginalised groups to express their priorities, concerns and understandings and to develop the skills to continue to learn and adapt to change.

The model was revised to account for the power relations that are a part of intervention processes and shape individuals' and groups' abilities to participate in co-learning. Power dynamics needed to be made explicit in the model of learning and sustainability and were subsequently represented with the inclusion of reflexivity. NGOs have to be aware of the interests, assumptions and values that underlie their approach and the effects of these in the local context in addition to the external factors that are constraining or enabling practice. This is argued to be important as the interests and assumption held by NGOs and donors will determine the knowledge that is deemed important for water interventions, the possible range of solutions on the ground and subsequent intervention processes.

### **7.83 Case study approach**

A strength of the case study approach was that it added explanatory power by providing insights into local understandings of place and meaning in another local

context. Although many similarities were observed between the village in the southern Hebron hills and the Bedouin settlement in the northern region of the West Bank, in the Jordan Valley, there were some differences that deepened an understanding of the dimensions of place and water. However, the two case study areas were not intended as comparative studies but were purposefully selected to explore local meanings around water in the region and the (re)presentations of local water issues by the case study NGO.

The aim of the data analysis was to relate the data to the theoretical meaning-based framework and to contribute to learning theory with the revision of a social learning model. The findings helped to define the boundaries in the educational literature in order to then identify learning perspectives and strategies that were consistent with the research question and purpose.

I had expected to observe greater dissonance between the accounts of local people and local NGOs but this did not emerge from the findings. NGOs who were involved in community-based water interventions were acutely aware of the constraints and issues that have an impact on what is possible on the ground. Due to the dependency of NGOs on donors, the case study NGO argues that their freedom to pursue alternative models or narratives is limited. As a result, there is a gap between rhetoric and practice. However, there are examples of NGOs who are attempting to negotiate the prescriptive models of donors and who are proposing actions at multiple levels as well as longer-term solutions to water issues, beyond local water provision.

The research context meant that the confidentiality of the participants' identities was paramount. This required the use of codes for identifying people and in the case of the focus group, it meant aggregating data. Although the geographical location was included in order to provide contextual data, place names were excluded. However, anonymity in this case does not preclude the research being used and distributed to NGOs and other interested stakeholders. While some researchers argue that anonymity and confidentiality are particularly problematic for thick descriptions of interpretative research that require a certain level of detail and contextual information (e.g. Walford, 2005), anonymity in this case does not affect the ability of the reader to make 'analytic generalisations' (Yin, 2003: 32). The data analysis involved generalising from the data and experiences during the fieldwork to more abstract principles as well as applying abstract theoretical ideas to the data. This process has been explained in detail so that the reader can make inferences from the findings and make sense of them in other settings.

### **7.84 Researcher effect**

As discussed in Chapter 3, the researcher understands that the accounts given by the research participants are all produced in a specific context. This is not to say that the

accounts are inauthentic but individuals may conform to what they anticipate others want to hear or to promote a certain social identity. I was interested in their experiences as they understand them and the meanings that are created from these experiences. As a researcher accompanied by the case study NGO, a particular relation of power was also established. Although some instances could be accounted for in relation to this, for example when an engineer with the NGO responded to an issue by promising residents that additional activities were planned, it does not invalidate the themes that emerged. Furthermore, I attempted to minimise this effect by asking more open questions or speaking with the engineers in the field in a more naturalistic way where possible for example during the car journey or discussing issues as we walked around the villages.

The focus group discussion seemed a more appropriate research method for this context as the interactions were more naturalistic than the semi-structured interviews. After reflection in the field about the power relations and ethical questions that presented themselves, I designed a series of participatory learning activities to attempt to distribute power more evenly in the context of our visits to the case study areas. However, unfortunately I did not gain the support of the NGO to deliver these in the latter stages of the field work.

### **7.85 Limitations**

The difficulties that I experienced in gaining access to the village and settlement meant that I was unable to achieve respondent validation with the residents that were interviewed. However, through the interviews with other local NGOs and the Arava Institute in the second phase of interviewing, I was able to gain additional interpretations of the research findings and confirm my inferences, which did relate to their experiences and observations with other communities in the West Bank.

The interviews were employed to achieve an understanding of the meanings around water but due to a number of constraints that were discussed in Chapter 4, I had limited interaction with local people beyond the interviews, which was deemed important in generating meaning in the context of the research question. The research would have benefited from observations of the interactions between people and their environment, for example everyday water practices and greater participation in the case study NGO's activities. However, some observation was possible in the host village where I stayed during the fieldwork.

The focus group provided a way to access a greater number of residents in light of the time constraints due to the NGOs schedule. During this, I was able to interact with the women whose stories and perspectives emerged from the discussion. It was not my intention with the focus group to homogenise the voices of the female residents, rather I responded to the opportunity as it presented itself.

## **7.86 Making the research available**

My intention with this research was always to privilege local meaning through the accounts of marginalised groups who lack access to safe, adequate water in the OPT. The purpose of the fieldwork was to understand the context and what can be learnt here about understandings of water shortages, through local accounts of water and place and NGOs' narratives. This research contributes to more nuanced understandings of water shortages and local realities in relation to the different dimensions of water that have been discussed within the sense of place framework. An understanding of water grounded in local meaning and experiences of displacement and loss, deepens an understanding of the dimensions of place. In relation to community-based water interventions, this research invites stakeholders to engage with local meanings, knowledge and experiences, particularly the socio-political processes and cultural practices through which water and place are rendered meaningful.

This research also contributes to current research in development and education that is exploring the relationship between community participation, ownership and sustainability in community-based water interventions. The model of social learning and sustainability that has been developed as an outcome of this research, supports the necessity of learning strategies that connect with local meanings, local knowledge and experiences in ways that inform and challenge the perspectives of multiple stakeholders and ultimately strengthen local agency. Participation in dialogue, actions and reflection that contribute to the practices that people value is fundamental not only to achieving valued functionings; the research has shown that it is fundamental to sense of place and self.

This research will be made available to the case study NGO and other NGOs that participated in the research and provides practical insights for interpretative appraisals for water interventions and learning strategies in their context of practice.

The asymmetrical power relationship between Israel and Palestine has been well documented in relation to the utilisation of water resources in the region. This research reinforces the argument that the current prescriptive donor model of what can be funded is limiting the transition from emergency water interventions to the coordinated development of sustainable WASH services. International donors, NGOs and other stakeholders in WASH, need to continue to engage more proactively in exploring and challenging the barriers to sustainable and equitable WASH services.

For the communities that participated in this research, the model of social learning and sustainability can be used heuristically by NGOs to bring about greater participation, ownership and agency in water interventions and that donors and the Palestinian Authority support longer-term equitable and sustainable solutions to water provision and use in the West Bank.

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## Appendices

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## Categories from the meaning-based framework

[illegible]

T1-T13

## **Appendix 2: Notes for Transcript 1 (Women's Committee, southern Hebron hill)**

### **Field diary notes:**

- Cisterns, wells and springs are traditional sources of water supply. Water was collected or diverted to fields or stored in cisterns. The cisterns and springs were central to residents lives.
- Water from cisterns were used for watering livestock and crops but people are now forced to use the water for drinking and washing. I was told that all village residents access and use the cisterns. Either each household has a cistern or there is a village cistern.
- People have not forgotten their springs and the names of these springs.
- Villagers are aware that groundwater levels are declining and attribute this to less rainfall and over abstraction by Israelis and agriculturalists due to large scale irrigation systems.
- Women - role in daily survival related tasks, very articulate about water issues.
- Women key decision makers regarding water related tasks in the household. Affects family members. Decide if water tastes ok to drink. Women's role in decision making outside of the household not clear.
- Very strong memory of an agricultural landscape. A symbolic landscape that is central to heritage and identity. A metaphor for being.

### **Summary of thematic categories**

#### **The SYMBOLIC (Life / Gift / Sustenance)**

Place embodies the values held by people. Memories of agriculture / narrative of past Palestinian landscape which has been lost:

*'When they came, they shot on people and fired missiles. She remembers it was July as the wheat was growing and all of the wheat was burnt due to shooting' L8-L10*

*'The land if the same as our soul. You understand? It is my Father, my Grandfather, my history. When we speak of our land, we speak of water, we speak of everything under the ground and everything above to the sky'. (Conversation with male resident while walking around the village)*

*'Land and water mean honour.'* Comment by the member of the NGO in response to further questioning about the understanding that *'the land is the same as' the soul.*

Water pipes - village residents want water pipe infrastructure even though they are aware that water supply will not increase:

*'They expect little water to flow in the pipes. But they hope for more water and even a little will reduce their suffering'. L147-148*

Villages without piped water supply become no source villages according to NGO categorisations.

Water shortages mean hardship and the loss of their way of life, their self-sufficiency. Their life on the land, pastoralism is their identity marker.

## **RELATIONSHIPS (belonging/ attachment / power)**

The women formed a committee in an attempt to re-establish community:

*'As a women's society we establish to attract projects to rehabilitate the area and to encourage those people who left their houses to come again'. L89-L90*

Women have to cope with water shortages. Gender conflict relating to use of water. The decision making within the household is primarily the responsibility of women:

*'First the problem is the water quality affects on her kids, secondly, water quantity shortage affect all of her work in the house, she can't clean the floors well, in the kitchen she has to minimise, in the Bathroom she has to minimise and she has a small cistern that is not able to serve them. She has many problems with her husband for the water saving. He ask her to save the water, he is jobless and he ask not to spend so much on water ...' L125-129*

*'They all say similar.'* (L134)

During times of scarcity, people seem to feel obliged to allow others to use water from their own source:

*'... when the cistern is finished, they take water from the family or her uncle, the brother of her husband, and they said don't take a lot of water, we need it. She can't irrigate any land near the house.' L129-130*

Collective livelihood activities:

*'Chicken farms as a group. Water production for meat. They say chicken production will succeed as a group. They have bees as a group ...' L165-167*



Memories of loss - of those who returned and were buried in the village and those who did not. The women have grown older but the dead are remembered as they were:

*'They were ordered to take something from their houses, they have been and killed ... and returned as dead bodies. The aunt of this woman is one of them ... She was twenty to thirty years old at that time. Few people have been survived ...'* L10-14

## **IDENTITY (self / collective / imagined)**

The claims people make on water and what they prioritise all relate to identity:

*'... she says if I have sheep and goats linked to other projects then she can produce milk cheese ... and sell and live from the income returns. So we have independence in the homes ...'* L164-L166

Talking about times before 1967 and the construction of the Wall:

*'They do not ask anyone to help them. They are self-sustained'. L46*

Village residents share an understanding of what it is that they do. *How does the place sustain identity?:*

*'We want to focus on animal production. This is a special case of our village as their history. We want an oven to make bread production'. L175-176*

Water shortages have created uncertainty about self and group identity. Linked to the idea of place as being and doings.

*'These stories are not for me, it is the story of the whole village'. L82-82*

Resistance:

*'The problems since those times ... before 1970 this village was full of people, then Israeli came and ... wiped it away. Every house. Now it contains 10 households compared to the initial population size ....houses has been demolished, people have been dismissed. Little people who stay here, try to fix the land ... Many people endured and died, like one lady [pause to seeks clarification] was shot in her abdomen as a child when she is baby, now she is old woman ... Her mum died from a missile. Many people died and there is resistance here from the local people'. L1-L7*

*'At that time life was difficult. People are living without any infrastructure, no water, no roads, no electricity and people feel that the life is harsh'. L24-26*



## **PLACE DEPENDENCE (security / social practices / economics)**

*'The land meant everything, our water, our animals and we cultivate from it ...'* L36-39

*'...They were living from the land.'*

Referring to the main spring in the area, *'she remembers she lives on it and all of the people live on it.'* L47-51

*'Our cisterns which was very large for the storage capacity has been lost.'* L37-38

*'Three main water sources springs have been lost by the wall. These ... were the source of water for the three or four villages in this area now all behind the wall. It was used by their grandmothers and their families.'* L47-49

*'This policy push many people to move from this village from this zone up the hill from where we entered..'* L71-72

Water enabled a certain way of life. A life which related to their identity, not only a livelihood activity. There is a deeper dimension to this:

*'The land for them means livelihood and life.'* L39-L40

*'... they eat the wheat from the cultivated land so she don't remember that she buy any wheat on the contrary she sell. They make flour and they do not ask anyone to help them. They are self-sustained.'* L44-46

*'An Israeli settlement is not far away from here, one of the settlers who is a big farmer take the spring water of the village and irrigate his animals which are of big numbers and irrigate his land for vegetables and grapes and for production of the fruits. He install pumps to put the water for a large area. From the occupied springs we see with our own eyes the Israeli settlers irrigating the land which has been confiscated from us with vegetables irrigated vegetables and versatile crop types. We see him. Before they install the wall or the fence here people normally move to their land and bring back thyme, olives and many other agricultural products.'* L57-L59

*'Now we are not allowing to rear the animals on the land ...'* L84-85

## **ACTIVITY (production / livelihood/ income and assets / education and skills)**

*'The land for them means livelihood and life...' L39*

*'They are self-sustained'. L46*

*'Before they install ... the fence here people normally move to ... their land and bring back thyme, olives and many other agricultural products. In one season we save more than one thousand euro from this. Now no.' L59-62*

Priorities:

*L114-L117 ' She proposes they want livelihood support for sheep and goats for livestock rearing chickens, cows, goats, sheep, water tanks and home garden...and land reclamation. Maybe water with these other projects. Maybe you have a small agricultural pool or a cistern for rainwater production for animals'.*

*'The priority number one is the water. Secondly livelihood support like cows, goats and sheep and chickens. This is for family expenditure for income...income generating projects [everyone nods]. Both types of projects together'. L160-163*

## **NATURE (nurturer of human fulfilment / natural capital / conservation / conflict / teacher)**

*'When you come here in Spring this is very nice. It is good biodiversity area, a lot of flowers'. L91-92*

Agricultural landscape:

*'She remembers it was July as the wheat was growing and all of the wheat was burnt due to shooting'. (as above)*

## **HERITAGE (shared histories / inheritance / stewardship / responsibilities)**

Memories of the events of dispossession defines how they talk about the present and the past, how they lived and what was theirs.

*'The Israeli killed the livestock the goats the sheep the cows which people own and it was grazing on their land ... they take this group of people in a closed area and they stopped them and took them to the military officer. They have no access to their land after that for their livestock to graze. They stopped their right of grazing and they kill the livestock that people live on it was a livelihood for them'. L31-35*

*'So now we will find many houses with no people living in. If the grandmother and grandfather lived here and died, the other people are afraid on their sons and their kids and they try to go far away from the wall'. L72-74*

*' Israeli soldiers came and the General said to her why you live here why are you not moving up ... She said this is my house, my land ...' L76-L78*

*'We want to focus on animal production. This is a special case of our village as their history. We want an oven to make bread production'. L175-176*

### **KNOWLEDGE AND ADAPTATION (technology / informal and formal systems / ecological and social knowledge / knowledge sharing / participation / local innovation)**

Technology they would prefer to use and historically have used. What are people able to do?

*'She said all of the NGOs' cisterns are not equal to this cistern size' speaking about the cistern technology that was used by the village for more than a hundred years. L53*

Water from cisterns was not traditionally used for drinking but due to shortages *'... now they are taking from cisterns, they have many cases of disease ...' L92-93*

Women have knowledge of the factors affecting water quality due to their reliance on the capture and storage of water from rainfall / runoff:

*'... my kids are suffering, suffer from diarrhoea ... She says the same for them [pointing at the other women] They jointly talk about one hundred case of water pollution related illness'. L93-95*

*'There are worms in the water because it is rainwater harvested from the catchment, an uncontrolled catchment ...' L100-101*

*'...she boils the water and in there is a lot of sediment...' L118-119*

It was unclear why the NGO had not organised training on water treatment during the rehabilitation of cisterns:

*'They jointly talk about one hundred case of water pollution related illness. Then she ask why we not given water filters then I discuss about the filter type and I said in the context of our project which is funded by the Polish Ministry of Foreign Affairs I mentioned that we will have a training day on water quality. So we will go into details for the water filter and the type of treatment that is required.' L95-99 / also see L100-105*

Living with uncertainty - people have developed multiple strategies but due to the political processes they have been unable to pursue multiple livelihood strategies.

Unable to cultivate in order to generate surpluses. Unable to grow subsistence crops or fodder crops.

The women understand the different water requirements of crops and what plants can grow with little water. The availability of water seems to determine choices above need and external factors. Women make the decisions concerning sowing and production for the home garden but no gardens were evident in the area I visited:

*'They say if you have small garden, you can irrigate it with grey water...They all say similar. This woman says she has a small cistern and tries to use the grey water, watering the plants. I don't use nanna (mint) I use other plants to save water'. L134-136*

Decisions are made based on daily exigencies. The women know how long the water in their cistern will sustain their families and they have to plan for the use of every drop of water:

*'... water quantity shortage affect all of her work in the house, she can't clean the floors well, in the kitchen she has to minimise, in the Bathroom she has to minimise and she has a small cistern that is not able to serve them'. L125-127*

*'All of us have to save water...' L132-133*

*'Before one week they ordered a truck of water and when they cook with this water, the taste was very bad and they get rid of the meal and they give it to the goat and they refuse it. This is water from another cistern far away from the house which comes from rainfall over the land. They take from this when their cistern is empty'. L138-142*

Some NGOs define the solution(s) so village residents do not have the opportunities to articulate their knowledge:

*'Many of them come to us and listen to our problems and after that they bring projects and then they say to us we bring this and this and this'. L107-109*

### **UNCERTAINTY (dynamic processes and systems / temporal and spatial variability / location of water as an input and as an output)**

Unlike natural variations in rainfall and the cyclical nature of drought in some regions of the world, uncertainty in relation to water does not abate for these women. Each year, the residents of the village know that the harvested rainwater will not be enough to meet even their basic needs. Uncertainty shapes their daily lives and without assets or the freedom to move there are limits to local resilience.

*During the interview, I ask if the interventions have helped to relieve this situation. A woman leaves and shortly returns with a plastic bottle filled with a yellowish cloudy liquid. She says 'this is our water' and no more needs to be said. [field notes]*

Uncertainty is perpetuated by the nature and short timescale of NGO intervention:

*'The organisations ... gave us some training and then they left us and have not come back'.  
L104 - 106 (sustainability)*

*'They [NGOs] bring chlorine ... The chlorine was ok but after that they don't have chlorine...  
Chlorine does not kill the worms ...' L100-103 (sustainability)*

*'We are thirsty we need water give us water! Four months until we have truck water, we are  
always waiting ...'. L154-155*

Uncertainties relating to political processes - the changing actions and location of the Israeli army:

*'Recently and during the last two or three years we have many accidents and problems with  
the Israeli soldiers. For example this women is responsible for the expenditure of her family  
because she live alone. When she bring her sheep and goats to graze near the fence it is their  
land the Israeli soldier shouted to her to go ten metres from this bit. She asks why but he has  
no answer. Another man has been shot from a gas bomb so they try to push people away  
even from this area. I will add from my experience and knowledge from other people in this  
area that Israeli are training in the night in shooting and after they finish their training they  
enter the wall and come here, maybe ten people...to make people afraid. This policy push  
many people to move from this village ...' L62-71*

The state is not seen as a provider:

*'... we don't know them and we don't see them'. L144-145*

*'They go to the municipality as a women's association many times asking for pipes lots of  
times. We are thirsty we need water give us water! Four months until we have truck water,  
always waiting ... Lots of promises and little has happened'. L153-159 (isolation /  
independence / resilience)*

### **Appendix 3: List of documents used for documentary analysis**

Document No.	Name of the policy paper or report	Source
1	Situation report on WASH in the OPT	Case Study NGO, 2006
2	Report on water pricing policy and demand management in the OPT	Case Study NGO, 2010
3	Monitoring water quality of rainwater harvesting cisterns in the West Bank	Case Study NGO, 2011
4	Report on multi-stakeholder involvement in WASH delivery in the OPT	Case Study NGO, 2011
5	Project report on the rehabilitation of cisterns, the construction of latrines and the distribution of plastic tanks for water storage and water quality tests for households in the West Bank.	Case Study NGO, 2012
6	Position Paper on prepaid water meters	Case Study NGO, 2013
-	Climate Change Adaptation Strategy for the Occupied Palestinian Territory	PWA, 2009
-	Final draft of the National Water and Wastewater Strategy for Palestine	PWA, 2013